

# PHILADELPHIA MEDICAL TIMES.

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## ORIGINAL COMMUNICATIONS.

### THE RELATIONS OF FORESTS TO HEALTH-RESORTS.\*

BY J. M. ANDERS, M.D., PH.D.

IT will not be denied that most modern medical science frequently cannot determine what particular climate is best adapted to the wants of individual cases of lung-disease, or even of invalids as a class. It is not a rare occurrence, though unfortunate, for the consumptive invalid to try not less than half a dozen reputed resorts in as many months without improvement,—nay, often with advancement of the disease and a desponding heart. Despite such obvious truths, it is nevertheless a fact that the climatic treatment of consumption offers the best chance of success, so unsatisfactory are the resources of the physician in his grapple with this disease.

In a former article it has been experimentally shown that forests exert a marked influence upon local climatology, and particularly the hydrology of a region. Since some of the deductions made in this paper have a direct bearing upon the subject we are now about to discuss, these may be briefly stated. In the first place, forests transpire vast quantities of aqueous vapor into our atmosphere; the result of a careful estimate made by the writer showing that a forest will give off, during the vegetative period, twice the amount evaporated from an equal area of open ground. It is a fact of prime importance, too, that transpiration from the forest takes place at a more uniform rate than evaporation from bodies of water and the soil: hence even in time of drought, when streams and shallow waters have dried up and evaporation from the soil is at a minimum, transpiration continues unremittingly to furnish atmospheric moisture in order to keep up, as nearly as possible, a uniform proportion of this substance in the air. There are various other ways in which forests affect local climatic conditions which are better understood. I refer to their power to intercept wind-currents, and their influence upon temperature, rendering

summer less sultry and winter somewhat milder. It should be stated that, for hygienic purposes in general, the percentage of forest-growth should be at least twenty-five.†

It naturally follows from the above that where humidity is desired, within due limits, in the treatment of consumptives and other invalids, forests afford one of the readiest and most pleasant means of attaining this end. As to the value of moisture in the air in the treatment of consumption, there is diversity of opinion. Most of the more recent writers have pronounced very strongly in favor of high and dry climes as offering superior advantages over medium or low elevations where considerable moisture prevails. Now, whatever may be urged against humidity from other sources, there are certain facts which go to prove that a fair proportion, or even a considerable amount, of moisture derived from plant-life is generally most desirable in the climatic treatment of a large class of invalids, particularly consumptives. It is important to have at all health-stations a dry soil, free from miasm.

It is unfortunate for science that the term "dry air" is so extremely vague in its meaning. Writers have the habit of speaking of an atmosphere as dry, when in reality it contains considerable moisture. For example, the air of Atlantic City is spoken of as "dry and bracing," as is also that of Denver, Colorado. Now, let any one take the meteorological reports of these places for the five winter months ending with March, as the writer has done, and reckon from Glaisher's table their *absolute* humidity. It will be found that the former place contains nearly twice as much, by weight, of vapor per cubic foot of atmosphere, as the latter.

The lack of this substance (aqueous vapor) in the atmosphere, an important office of which is to intercept terrestrial radiation, is the one great cause of the extreme diurnal range of temperature at high altitudes; and in general the greatest objection to the climate at very high elevations is the great range in daily temperature.

But let it be understood that the writer has no intention of denying the fact that certain invalids, particularly some cases of chronic phthisis, in whom a good degree

\* Read before the Alumni Association of the Auxiliary Department of Medicine, University of Pennsylvania.

† Forests: their Relation to Climate and Rainfall. American Naturalist for February 1, 1882.

of strength is retained, are not benefited, or even apparently restored, by a prolonged residence at high altitudes where the air is much dryer than the above standard indicates, but even in these cases the humidity arising from the presence of forests would, at least, not be objectionable, for the aqueous vapor emitted by plants may be assumed to be widely different from that evaporated from inorganic matter and from bodies of water, being purified and endowed with medical properties by passing through the plant. No doubt can, we think, be entertained as to the correctness of this view, for it is quite reasonable to suppose that with the rapid transpiration of aqueous vapor from a plant, as shown by our investigations, there are active principles peculiar to the species floating in the life-current of the tree or plant, which also assume the gaseous form and are held in solution by the vapor given off, thus medicating it. The observation has been made that children playing among our common poppy-plants will manifest signs indicating the physiological effects of opium, which must have gained entrance to the system through the inhaled air. We know that the atmosphere of the pine and hemlock forests is impregnated with the vapor of turpentine, the value of which for giving relief to the pulmonary invalid has long been established. We here get the local action of the terebinthinate principles from nature's great atomizer upon the diseased respiratory tract. Doubtless all the species belonging to the large order of Coniferæ give off medicinal agents. It is highly probable that there are other useful substances evolved which have not, as yet, been detected.

Forests, therefore, are nature's faithful and perfect atomizers, whose vapors are, perhaps, capable of an equally high purpose, respecting their therapeutic application, with those which are the product of the ingenuity of man.

A Vienna physician, Dr. Schrieber (address before the Austrian Meteorological Society), states that the turpentine exhaled by coniferous plants possesses to a greater degree than any other known substance the power to convert the oxygen into ozone. Of this remarkable substance we know but little definitely, and some of the hypotheses brought forward as to its nature appear almost wild. It can also be produced by electricity, and in various

other ways. It is found in the air to the windward of a city, but not to the leeward. Ozone constantly purifies the air of organic putrescent matter through its powerful oxidizing properties, and, according to Pettenkofer, it cannot be detected in our best-ventilated dwellings. If, then, the pine exhalations have this power to convert oxygen into ozone, pine forests may for the present be looked upon as furnishing to the invalid advantages not, perhaps, possessed in the same degree by other forests. But may we not reasonably presume that the exhalations from species of forest-growth other than the pine have, to a certain extent at least, this same power to convert oxygen into ozone?

Keeping in remembrance the foregoing facts concerning the exhalations from our forests, who will question that forest humidity is not of far greater hygienic value to the invalid than moisture from other sources? And who will say that forests, by increasing and maintaining an equable standard of atmospheric moisture at these resorts, especially in inland districts, will not increase their advantages?

As already indicated, from twenty-five to thirty per cent. of woodland is sufficient for hygienic purposes in general, but a much larger proportion is required at health-resorts, so as to meet the indications of the consumptive and other invalids. In order to arrive at conclusions which are to be reliable in the choice of a climate or forest resort, it will be necessary to distinguish, in a general way, between the different forms of disease of the respiratory tract and consumption in particular.

Perhaps the majority of cases of chronic phthisis develop very gradually, the only symptom at first being slight cough, which attracts little or no attention. By and by there is slight expectoration, the appetite fails, the pulse is quickened, and bodily strength diminishes. These symptoms persist and become intensified, with feverish excitement and perceptible falling off in flesh. Frequently about this period the doctor is consulted, and on making a physical exploration of the chest finds evidences of the commencement of pathological changes in the lungs so characteristic of the disease in question.

Then, there is a catarrhal form of consumption, with inflammatory action, implicating the bronchial and laryngeal mu-

cous membranes, originating usually in colds and occurring in raw, cold climates. Another form of the disease is known as laryngeal phthisis, in which the chief difficulty rests with the larynx.

The above kinds of cases, when not attended by marked hectic fever and not too far advanced as regards the local disease, or, in other words, in the early stages of the affection, including cases of chronic bronchitis and laryngitis, would be greatly benefited by a forest atmosphere with just sufficient moisture to make it bracing and give it something of a soothing character in a hilly district. By increasing the proportion of forest area of a region to from fifty to seventy per cent., according to elevation, we get an atmosphere of about the requisite humidity. It is easy to perceive how such an atmosphere is capable of exerting a beneficial influence on the diseased mucous membrane of the air-passages through the continuous gentle atomization of this medicated vapor. The air of the wilderness also benefits by promoting sleep, increasing the appetite, and improving nutrition. It is, however, impossible, in a disease presenting so many complications and peculiarities as the one under consideration, to lay down a positive rule, which shall be applicable in all cases, as regards the percentage of woodland. The object here is to give a general idea of the proportion of forest-growth and character of climate desirable in the various forms of consumption. The choice of a particular locality must be governed largely by the peculiarities of individual cases. The earlier the patient is sent to his new abode the better, and the invariable practice among physicians should be to propose a change as soon as they are convinced that the monster disease is developing or even threatening.

There is another large class of consumptive invalids, demanding a somewhat moister and milder climate than those above described. To these we shall now briefly allude. They comprise nearly all cases of whatever form of the disease far advanced, or what is termed by various authors the third or last stage of the disease, with extensive lesions or excavations in the lungs, accompanied by hectic fever, great weakness, and emaciation. To this category, also, belong those patients in whom there is no correlation between the almost complete loss of strength and the

small portion of the lung affected. Now, persons with these latter stages of phthisis pulmonalis should not be sent to high altitudes with the vain hope of assisting their cure, since such invalids cannot lead a nomadic life without aggravating their condition. On the contrary, they need a genial climate to invite them out of doors, where they can exercise in the pure forest air with more or less humidity, according to peculiarities of the disease and individual, encircling the feverish frame, which often renders such valuable service in adding to the patient's comfort, an office not to be despised in these usually hopeless cases. Moreover, an atmosphere of this character would do good service in alleviating urgent symptoms, as troublesome cough, irritability of nervous system, etc., and thus aid in delaying, if not arresting, the onward march of the disease to a fatal issue. This class of invalids, therefore, require a greater percentage of forest-growth than the former group, from seventy-five per cent. upward, and a milder temperature, the effect depending also to a great extent upon the proximity to the coast and degree of elevation.

We have examples of winter forest resorts adapted to the treatment of cases of every description, throughout some of our Southern States, particularly South Carolina and Georgia. From Aiken, South Carolina, latitude about  $33.5^{\circ}$ , in a southeasterly direction all the way to Thomasville, Georgia, latitude about  $30.5^{\circ}$ , at an elevation ranging from five hundred to two thousand feet, there are abundant pine forests. Along this extensive wooded region already there are to be found many winter health-stations, among which we may mention Eastman's and Mount Airy, near Macon, South Carolina, and Thomasville, in South Georgia. These and other places which have been quite recently brought to notice have proved to be exceedingly operative in their good effects upon pulmonary invalids, who, it appears, are fast giving up the low moist places of the Florida coast, and the popular tide now is towards the pine forests of the uplands. The soil is dry and sandy; the atmosphere contains a fair proportion of humidity, is impregnated with the balsamic vapors from the pine-tree, and is bracing and strikingly agreeable to consumptive invalids.\* Nu-

\* For some of the main facts relating to this region I am indebted to my friend Dr. R. S. McCombs.

merous instances have been reported by physicians to the journals exhibiting the value of a residence at these health-stations.

Mechanically, forests would afford shelter from objectionable cold winds, which often prevail at winter resorts, and subjects who are greatly debilitated are usually very injuriously affected by them. On the other hand, when not contra-indicated by peculiarities, a moderately strong wind is supposed to be beneficial to the consumptive. The trees should not be situated too near the dwellings at these health-resorts, on the east and west sides, as the morning and evening sun are most valuable. We have no intention of underrating the importance of sunlight to the invalid, and would recommend his moving among ornamental shrubbery and flowering plants mornings and evenings, where he can simultaneously bask in the sunshine and inhale the vapors transpired from nature's small atomizers.

As every one knows, owing to the prevalence of damp and cold weather during the winter season in our latitude, we have no suitable climate for our patients; and hence those who are unable because of their condition, or for pecuniary or other reasons, to make the journey to the forest resorts at the South, the writer would particularly advise to stock their living- and sleeping-apartments with thrifty foliage and flowering plants having no objectionable fragrance. The subject of the influence of house-plants has been elsewhere discussed.\* Suffice it to say in this connection that the writer has, by means of plants, entirely changed the atmosphere of the consumptive's apartments, rendering it most comfortable and agreeable and with undoubted benefit to his condition. It has been found also from personal investigation that those engaged in the pursuit of gardening, and florists, who work and live, many of them, from ten to fourteen hours daily in our hot-houses, are, even if predisposed by inheritance, rarely if ever attacked by consumption. And instances have been reported by others in confirmation of these facts, where persons strongly predisposed to phthisis have escaped the disease in consequence of having become enthusiasts in the cultivation and care of house-plants.

Having indicated localities appropriate

for the invalid during the winter season, it remains to be answered, where shall he go during the warm season? During the spring, summer, and autumn months till the approach of the first cold weather, some forest resort in our own latitude at Philadelphia would be all that could be desired for the large proportion of pulmonary troubles described. The place selected should possess certain natural elements as regards topographical arrangement and surrounding scenery. The soil, as already stated, should be dry, and hotel accommodations good. Such localities are to be found in great numbers throughout the Eastern and Middle States, and particularly among the wooded hills and mountain-ranges of our own Keystone. It might be well to mention that in the selection of a summer resort for the invalid the previous classification of consumptives and the amount of forest-growth required for their climatic treatment should be consulted. In general terms, we may say here that the places best suited for those whose strength will admit of a nomadic life, and who usually belong to the first class we have described, are upon mountainous elevations with varied picturesque scenery, since exercise in these cases is of paramount importance. Here the varied panorama would afford pleasure to the senses, while at the same time nature's great remedy, forest humidity, exerts a curative influence. Subjects who are greatly debilitated with extensive lung-lesions belonging to the second class described, whose strength would not allow of an active roving life among the hills, should lead a more quiet existence, in a milder climate, at a lower level and at a place sheltered from strong winds. If the invalid is unaccustomed to a varied social life, a stay at some properly-located farm-house affording comforts and a good *cuisine* would answer every purpose. He should spend as much time as possible in the woods, which ought to be conveniently located. For such invalids there should be opportunity for short excursions in the environs. During the hottest season this class of invalids would find densely-shaded nooks add greatly to their comfort, for the trees, as shown in an article elsewhere published, have a temperature several degrees lower than the surrounding air, thus to a degree absorbing the heat of the body. Moreover, the slight draught always caused by shade in

\* Hygienic and Therapeutic Relations of House-Plants, Philadelphia Medical Times, May 8, 1881.



the open air still further increases its cooling effect.

In this connection the increased advantages of camp-life (during five or six months of the year) might be alluded to. We live more than half our time in-doors, often breathing a more or less vitiated atmosphere, and the invalid boarding at a hotel or farm-house is not receiving the full benefit of the forest air for more than about ten hours daily, while the one in his tent is almost constantly breathing the unpolluted and invigorating air of the forest.

Thus it will be seen that it is rarely necessary for the sufferer from consumption to be separated very far from the endearing relations of home for the greater part of the year, and he would receive as much benefit as those undertaking to reach noted resorts long distances away, if not more,—for we must take into account the injurious consequences of long journeys, particularly in subjects who are greatly debilitated.

The air of the forest, besides being very useful to patients with pulmonary disease, including consumption, chronic bronchitis, and laryngitis, is highly beneficial in run-down conditions from other causes, as overwork, and during convalescence from fevers and other affections. It is stated by Dr. Oswald (*Popular Science Monthly* for August, 1877) that scirrhus affections of the skin disappear under the disinfecting influence of the forest air. The same author quotes from Dr. Brehm, who has observed that "ophthalmia and leprosy, which have become hereditary diseases not only in the valley of the Nile, but also in the tablelands of Barca and Tripoli, are utterly unknown in the well-timbered valley of Abyssinia, though the Abyssinians live more than a hundred geographical miles nearer to the equator than their afflicted neighbors."

We wish to devote some little attention to the subject of the sanitary influence of public squares on the atmosphere of cities. It will be remembered that we have shown that the action of forests on the atmosphere is not extended to any great distance around,—in other words, is local: hence in large cities quite a number of squares of the size of those in Philadelphia would be needed to produce the effect desired. The proportion in squares of the surface-area should not be less than has been laid down in the rule given for ordinary hygienic purposes,—namely, one-fourth. It

is evident that this would be impracticable in the older cities already densely built up; but here something like the proper ratio would be attainable by the more general planting of trees on either side of the thoroughfares. Our conclusions respecting the influence of forests upon local climate apply, with few exceptions, in the present instance. The square may be looked upon as a copy of a forest of reduced size. For obvious reasons, their effect in mitigating extreme cold by breaking the force of strong wind-currents is here very slight; but the trees, by causing shade and transpiring aqueous vapor, have a delightful cooling effect, and thus tend to mitigate the oppressive heat of our cities. The most important element of their influence, however, is the power to increase atmospheric moisture during the warm season and to purify the air by the constant atomization of this vapor; for plant-vapor doubtless is capable of exercising a powerful influence upon the salubrity of a vitiated city air. Undoubtedly, then, public squares have a sanitary bearing worthy of the serious consideration of our sanitarians.

These public grounds should be densely planted with forest-trees and ornamental shrubbery, some of our squares in Philadelphia having only about half the requisite number. By thus improving them they would become of greater hygienic value. They possess the advantage of being accessible to all classes; and, though the masses would be unable to frequent them to any extent, if properly located in relation to one another their influence would be generally felt.

But trees in our streets, if everywhere present, would have a still more potent influence. The aqueous vapor and other substances evolved through the function of transpiration would render the air of the street—which is the air we breathe—fresh and pure and bestow upon it health-giving qualities; and whatever effect trees have in producing ozone is of vital importance in this connection, for, as already pointed out, the action of this substance is thoroughly to disinfect the atmosphere. Thus, by means of ventilation, a purer and wholesomer atmosphere is admitted into our dwellings. May not the presence of a sufficient number of trees in our thoroughfares have the effect of removing from the atmosphere substances likely to become sources of disease? And,

if our premises are correct, might we not reasonably hope to lessen thereby the number of cases of consumption?

In the light of the present views, trees should be planted in our streets, not only in some places, but universally, and our public squares should be improved by increasing the amount of vegetation in them. Apart from the beneficial influence upon the atmosphere, it must be noted that this would add greatly to the natural beauty and attractiveness of a city.

Finally, we desire to say a word in regard to Fairmount Park and its merits as a sanatorium. Its many broken ridges and ravines covered by a luxuriance of wild vegetation present a grace and grandeur of natural topography and scenery rarely met with. Its drives, winding in graceful curves on either side of the Schuylkill River, are lined with arboreal vegetation, creating many shady nooks, which are so much enjoyed by the pleasure-seeker, while they afford comfort to the invalid. We here have those natural elements so well adapted to relieve *ennui* and entertain the mind with agreeable impressions. Here nature has also bestowed with a lavish hand floral life, presenting inducements to the healthful study of botany. There is perhaps sufficient vegetable growth in our Park to maintain something approaching to a healthful standard of humidity in the air in summer and impart to it the health-giving qualities in general. The air is cool and highly agreeable during the vegetative period, as thousands of our citizens would gladly attest. With these elements of climatology present, Fairmount Park certainly is entitled to the rank of a sanatorium of no mean value; and yet its efficacy might be greatly enhanced by the more extensive cultivation of trees and shrubbery.

### LARGE DOUBLE SCROTAL HERNIA.

*Read before the Clinical Section of the Philadelphia County Medical Society, January 31, 1882.*

BY W. R. D. BLACKWOOD, M.D.,  
Physician to St. Mary's Hospital.

THE patient, John R., has suffered from this enormous hernia for forty years, during twenty of which it has maintained its present size. Its dimensions are tonight, from the pubis to the anus, thirty-four inches; laterally, twenty-nine inches;

and at times, from inattention to diet, it assumes still larger proportions. Indulgence in potatoes increases its bulk, but no other starchy food has this effect. He is 80 years old, yet does really hard work, and within some ten years past has frequently carried a bag of wool of from one hundred to two hundred pounds' weight. He went through an attack of gastritis, with much abdominal irritation, two months ago,—enough to have killed him, in my opinion; but by simple treatment he readily recovered, and is now in robust health. I exhibit him as a curiosity as to size of rupture, ability to work at hard labor, good condition in one so aged, and as a sample of extraordinarily shapely build of cranium and well-preserved intelligence in a high degree, considering his station in humble life.

### SPECIMEN OF MALIGNANT ORBITAL GROWTH.

*Read before the Clinical Section of the Philadelphia County Medical Society, January 31, 1882, and presented*

BY ALBERT G. HEYL, M.D.,  
Ophthalmic Surgeon to the Episcopal Hospital.

BRIDGET —, æt. 60, presented herself at the Eye and Ear Dispensary of the Episcopal Hospital December 27, 1881. The sight of left eye was lost about a year and a half ago. The failure of sight was rapid but gradual. Thus, the patient noticed at the time that on closing the right eye she could see objects across the street; but on repeating the experiment two weeks afterwards she could only see the motion of the hand. About five weeks ago the eye became red and painful; it began to grow large, and in about two weeks became quite prominent.

*Status Prasens.*—Left eye: lids oedematous and do not cover the eyeball; the layers of cornea almost down to the membrane of Descemet absent. Doubtless they have sloughed away. No staphylomatous protrusion to be seen about the eyeball, which is pushed forward and downward. Conjunctiva strongly injected. In the upper conjunctival fornix some irregular prominences noted, due to solid subconjunctival masses. Near by, a congeries of enlarged and varicose conjunctival vessels. No pulsation in the orbital contents. The nasal cavities, so far as can be seen, are free from abnormal growths. The vision of the other eye is good; the nerve healthy. Scattered over the fundus are a number of white masses, situated probably in the external layers of the retina. The edges are well defined, and they vary in size, the largest being perhaps one-fifth the size of the papilla. No other abnormality observed.

The patient was admitted to the ward. The



exophthalmos evidently increased during the next few days, and the diagnosis of a malignant orbital growth, probably a glio-sarcoma, was made. The removal of the growth was proposed to the patient, who willingly acquiesced. The operation was performed in the usual manner. The integrity of the roof of the orbit was tested after the manner recommended by Billroth, and found to be maintained. After dividing the external canthus and the conjunctival fornix, the scissors were passed along the outer orbital wall, separating a mass of encephaloid material. Immediately behind the eyeball the scissors penetrated a cavity filled apparently with clotted blood. The bleeding being profuse, the eyeball and as much as possible of the growth was removed. Bleeding was abated by hot water; the walls of the orbit were cleared of the remaining masses of the growth. The optic nerve, which had been cut off close to the optic foramen, was surrounded by diseased tissue, not removable by the scissors. To this a strong solution of chloride of zinc was applied. The orbit was dressed with cotton soaked in solution of boracic acid. Nothing special occurred in the further course of the case, except that traumatic diphtheritis set in, starting apparently on the cut surfaces of the lids, and spreading thence into the orbits.

The clinical relations of this case, interesting though they may be, cannot be dwelt upon at present, as the specimen is simply submitted for microscopic examination.

#### REMARKS ON INTESTINAL PARASITES.

Read before the Clinical Section of the Philadelphia County Medical Society, January 31, 1882.

BY F. P. HENRY, M.D.

THE subject of human parasites, upon which I was requested, at rather short notice, to make some remarks this evening, is so comprehensive that, were I to undertake to refer to them all, within the limit of time allotted me, I could do little more than mention their names and those of the diseases to which they give rise. I have therefore decided to confine myself to a few general observations upon those varieties of worms which are most frequently found in the intestines of man. Of these the principal are the *Ascaris lumbricoides*, the *Oxyuris vermicularis*, and the different kinds of tape-worm. The first two are by far the most common, and, owing to their universal prevalence and the readiness with which specimens are obtained, we are thoroughly acquainted with their anatomy both

as embryos and as mature individuals. Nevertheless, the most competent helminthologists acknowledge their complete ignorance of the manner in which the lumbricoid worm is first introduced into the system. Leuckart has fed dogs, pigs, rabbits, and mice with the ripe eggs of the *Ascaris lumbricoides*, and has made similar experiments on man, in both cases with negative results. It is probable that these worms are introduced into the stomach in an embryonic form. Niemeyer has suggested the possibility of their finding entrance into the system through the use of bad flour, and refers to the observations of Stein, who found entozoa in weevils.

The *Oxyuris vermicularis* is developed directly from the egg, and this is one of the reasons of its persistent stay in the intestines, for, by self-infection, the eggs are constantly swallowed by children and others who are careless in regard to habits of cleanliness. Self-infection is caused by scratching the anus and neighboring parts and subsequently conveying the eggs into the mouth. This may happen in the case of persons who are tolerably cleanly in their habits; for Zenker has frequently found mature eggs under the nails of those afflicted with these parasites.

It is thought by many that the principal habitat of the *Oxyuris* is the rectum, and this theory has led to a treatment that is at best but palliative. "The generally-prevalent idea," says Heller, "and that which is upheld in all the books, that the *Oxyuris* inhabits the rectum, is entirely false." The mature males inhabit chiefly the small intestine; the pregnant females chiefly the cæcum, where they remain until they are distended with eggs. They then descend to the rectum and deposit their eggs. The young, when hatched, immediately migrate to the small intestine.

The treatment of the *Oxyuris* recommended by Heller is one of saline catharsis, and of enemata so administered as to reach the cæcum. The cathartic part of this treatment is based upon the observation that in choleraic conditions vast quantities of parasitic ova are often expelled. The appearance of these ova in the stools of cholera patients led to a curious blunder both in Germany and England, where they were regarded as a fungus peculiar to that disease. Another species of worm, the *Trichocephalus dispar*, having been frequently found in the stools of typhoid-fever

patients, has been regarded by some as the cause of that affection. The symptoms due to the presence of the round worm scarcely suffice for a diagnosis. There can be no doubt that in some cases grave disturbance of the nervous system, in others intestinal catarrh, is caused by them, while in perhaps the most numerous class of cases they give rise to no symptoms that cannot be referred to ordinary causes.

Formerly it was the custom to attribute almost every digestive disorder occurring during childhood to the presence of worms. Now there appears to be a tendency to go to the opposite extreme, and to deny that they are the cause of any symptoms whatever. Heller remarks upon this tendency, and warns against it, although, says he, "there is little likelihood of our going so far as to look on them as the guardian angels of children, ever ready to help them in their time of need."

The treatment of lumbricoid worms is too well known for me to comment upon it. There is one point concerning it, however, which seems to me of some interest, and that is the fact that fractional grain doses of santonin retain their full activity after having passed through the stomach. Many physicians are sceptical as to the effect of small doses of drugs administered with a view to produce an alterative effect upon the small and large intestine; but facts like that above given should induce them to be cautious about rejecting any remedy upon mere hypothetical grounds.

The most interesting fact concerning the tape-worm is the complexity of its mode of existence. Its ova, being discharged from the intestine of man, are swallowed by another animal, in whose tissues they reach the larval stage of their existence. These larvæ, being in turn swallowed by man, reach the mature stage of their development in his intestine. This cyclical method of growth is in the highest degree opposed to the existence of the parasite, and is counterbalanced by its enormous fertility. According to E. Wagner, "in the case of the tape-worm, out of eighty-five millions of eggs, only one is developed again into a tape-worm."

Though many species of tape-worm are known to exist, four only are of interest and importance to the practical physician: these are, *Tenia solium*, *Tenia medio-canellata*, *Tenia echinococcus*, and *Bothriocephalus latus*.

Of these, the designation of the first is very ill chosen; indeed, I have found it impossible to ascertain what Linnæus intended by it. If, as some think, he meant solitary,—an absurd supposition, in my opinion,—he must have been mistaken as to the habits of this parasite; for when a number of tape-worms inhabit the intestine they are almost invariably of the *solium* variety. I have consulted a distinguished classical scholar of this city, a member of our own profession, who acknowledges his inability to interpret the term *solium* as used in connection with *Tenia*. Such, however, is the weight of authority that, notwithstanding the obscurity surrounding this word, I shall continue to stultify myself by its employment.

Heller objects to the term *medio-canellata* applied to the second variety, on the ground that it is founded upon an erroneous anatomical idea, and employs instead the term *saginata*, stout or well fed, which it had originally received from Goeze.

The diagnosis as to the kind of tape-worm present in a case may be made by inspection of the segments voided per rectum. It is important that the variety of worm be clearly ascertained, for nervous symptoms occurring in an individual who is or has been the host of the *Tenia solium* should lead to the suspicion of the presence of the tape-worm larva, the *Cysticercus cellulosæ*, in some portion of the nerve-centres.

The chief seat of the *Cysticercus* is the intermuscular connective tissue, after which come the brain and the eye. In the latter situation Von Graefe was able in four cases to watch the development of the entozoon from the time of its appearance beneath the retina, which it pushes before it, causing a more or less extensive detachment, until its eruption into the vitreous humor, which, in the majority of cases, it makes its seat. An interesting case of intraocular cysticercus recently occurred in the practice of Dr. James E. Garretson, of this city, and is reported by Dr. C. S. Turnbull in vol. xii. of the Transactions of the State Medical Society, to which I refer those interested in the subject. Another case of suspected intraocular cysticercus was recently exhibited by Dr. Garretson to the Pathological Society of Philadelphia. I had an opportunity of seeing it, and was struck with the remarkable similarity, both in size and shape, which it bore to a cysti-



cercus. In reply to a note asking for the subsequent history of this case, Dr. Garretson informs me that he has lost sight of the patient.

When the *Tenia solium* and its cysticercus are present in the same case, what is the source of the latter? This is an interesting question and one which has received different answers. Self-infection would be the answer of Heller, while Roberts considers that they are derived from independent sources. The former method of the introduction of the cyst into the solid tissues of one who is the host of a tape-worm seems to me the most probable. Self-infection may occur by detached segments being forced upward, during the act of vomiting, into the stomach, where, undergoing digestion by the gastric juice, the eggs are liberated and are developed into cysticerci. Or it is perhaps permissible to suppose that such action may take place in the upper portion of the small intestine, within the sphere of the pancreatic secretion, which fluid, as is well known, contains a ferment called trypsin, which is capable of digesting proteids in an alkaline medium. The practical inference is to avoid as far as possible, in our treatment of those afflicted with *Tenia solium*, such drugs as are likely to excite emesis. This is only important in the case of *Tenia solium*, as the cysticercus of no other variety is known to infest the tissues of man.

The *Tenia echinococcus* is a parasite of the dog, existing only in its larval state in the human system. It possesses great interest to the pathologist, chiefly on account of the fact that in one of its forms, *Echinococcus multilocularis*, it was constantly mistaken for colloid cancer up to so late a period as 1856, when Virchow pointed out its true nature.

The so-called hydatid cysts are rarely met with in this country. But two specimens have been presented to the Pathological Society of Philadelphia, one by the late Dr. J. B. Mustin for Dr. Nancrede, recorded in vol. iii. of the Transactions; the other by Dr. Hutchinson, recorded in vol. iv.

An exceedingly rare specimen of *Tenia*, the *Tenia nana*, was exhibited by Dr. E. A. Spooner, of this city, before the College of Physicians in 1872. As far as I am aware, it had been previously observed only by Bilharz in Egypt. Heller, who had seen an account of Spooner's specimen in

a German periodical, was inclined, in the absence of a minute description of the head of the animal, to regard it as a specimen of *Tenia flavopunctata*, which it is said to resemble. In length, however, and in the number of its segments, Dr. Spooner's specimen accurately corresponds with the account given by Bilharz of the *Tenia nana*. I am informed by Dr. Spooner that the patient who passed these worms has remained in good health ever since.

There are other intestinal parasites to which I would refer, did time permit. Among the most interesting of those remaining are the *Trichina spiralis* and the *Anchylostomum duodenale*. In countries where the latter prevails, the cachexia to which it gives rise is liable to be confounded with pernicious anæmia; and even in this country I would suggest that a careful search be made for this parasite in all autopsies in cases of supposed pernicious anæmia.

I have placed under the microscope the following specimens: *Trichina*, free and in muscular tissue; *proglottis* of *Tenia solium*, *Cysticercus cellulosus*, *Acarus scabiei*, and *Echinococcus* brood capsules, for the use of which, as well as for that of the microscopes, I am indebted to Mr. Walmsley, of the firm of R. & J. Beck.

#### OBSERVATIONS ON EXAMINATIONS FOR THE TUBE-CASTS OF BRIGHT'S DISEASE.

Read before the Clinical Section of the Philadelphia County Medical Society, January 31, 1882.

BY JOS. G. RICHARDSON, M.D.,

Professor of Hygiene and Demonstrator of Histology in the University of Pennsylvania.

MR. PRESIDENT and Fellow-Members of the County Medical Society,—I feel almost as if I owed you an apology in advance for attempting to interest you in the subject of the tube-casts of Bright's disease, and my justification is that our energetic Committee on Clinical Pathology has laid it upon me as a duty, with such urgency that I felt bound not to refuse to do my best towards making a few remarks upon this subject not absolutely wearisome.

Of course I need only just remind such an audience as I see before me that tube-casts are solid cylinders formed in the uriniferous tubules of the kidneys during the course of certain acute maladies, such as

diphtheria, scarlatina, typhoid fever, or yellow fever, and in the group of more chronic renal affections entitled generically Bright's diseases. These casts differ in size, structure, and general appearance, and constitute, I think, very important aids in recognizing the form and stage of Bright's disease. Their diagnostic value has lately been contested by the famous French authority Prof. Charcot, and by others, but, for reasons which I shall give you presently, I think these gentlemen are mistaken in their opinion.

The first specimen I have to submit to your inspection is a section of gouty kidney, beautifully double-stained by my friend Dr. Geo. A. Piersol, which shows numerous casts filling the calibre of uriniferous tubules, and so obstructing them that little or no urine could pass, thus contributing in a purely mechanical manner to the scanty flow of the renal secretion which often occurs in Bright's disease.

There may also be seen a contracted Malpighian corpuscle, the vastly thickened wall of which displays the fibrinous exudation it contains, stained the exact blue tint of the tube-casts which plug the uriniferous tubules. Specimen No. 2 exhibits "small hyaline tube-casts." No. 3, "pale and dark granular tube-casts." No. 4, "epithelial tube-casts." No. 5, "large waxy tube-casts," some three-hundredth of an inch in diameter. No. 7, "granular cast, with pus-corpuscles attached."

The search after tube-casts should be much more thorough than is generally made, and frequently a half-hour's examination will be rewarded with but one or two faint hyaline casts. I have found tube-casts abundant in the urine of a patient with diphtheria two days after the commencement of the attack, so that they do sometimes, at least, give us very prompt warning of the onset of disease. Including a case now under my care, in which the diagnosis is not positively established, I have seen three cases of Bright's disease in which I detected casts, whilst there was absolutely no albumen in the renal secretion.

The exact diagnostic value of the tube-casts in any particular instance must be determined by a careful consideration of the history, inherited tendencies, general symptoms, etc., as pointed out in the standard text-books upon the subject.

The new points to which I ask your at-

tention may seem at first sight too insignificant to be worthy of notice, yet I venture to submit them, because when combined with other little facts, resulting from your own experience, or that of our professional brethren elsewhere, they may contribute to the advancement of true medical science, for which we are all laboring so earnestly.

First, in regard to mucous casts, which often puzzle or actually mislead beginners in microscopy: these are long, often branched, rarely epithelial in their character, but sometimes having leucocytes attached to their surfaces. In my experience they generally shrink up in the acetate of potash solution, and this may be recommended as a diagnostic test for them. As they are apt to appear in cases of irritation of the bladder, it has occurred to me that they may proceed, when found in the urine of male patients, from the ducts and follicles of the prostate gland and perhaps of the urethral glands.

Second, I propose the use of osmic acid to demonstrate the existence of slight fatty degeneration in cells of renal epithelium attached to "epithelial casts," also the employment of aniline solution to bring into view very faint and doubtful "hyaline casts," which might otherwise escape observation.

Third, I claim that we can, by a careful consideration of the number of the empty "cell-walls" of red blood-corpuscles attached to the various forms of tube-casts, gain important information occasionally as to the activity of the renal congestion in Bright's disease (see *American Journal of the Medical Sciences*, January, 1870).

Fourth, it seems probable that many cases of Bright's disease escape detection every year, simply because no microscope is convenient, at least until after putrefaction renders the examination difficult or unreliable. I therefore invite attention again to my method of preserving tube-casts, and advise that in every instance of possible renal disease, where a thorough investigation is not made at once, a couple of fluidrachms of the sediment from the urine should be poured into a small vial containing about an equal bulk of dry acetate of potash, which will perfectly preserve tube-casts, if it happen to contain any, for careful study at any future time.

Fifth, having observed that many tube-casts in the urine of yellow-fever patients

are made up partly or wholly of fungous spores (micrococci), and also that the kidneys of some persons dying of yellow fever had their uriniferous tubules generally obstructed by plugs of micrococcus, I advanced the theory at Richmond in 1878 that the suppression of urine so common in fatal cases of yellow fever was more or less mechanically due to this occlusion of the renal tubules. Such a doctrine was rendered highly probable by the observations of Prof. Orth, and gains additional confirmation from the recent very important investigations of Prof. H. C. Wood and Dr. Formad upon diphtheria.

Lastly, believing as I do that some light may be thrown upon nearly one-half of our cases in general practice by microscopic examination of the urine, sputum, blood, etc., and that therefore no physician can honestly do his whole duty to his patients without frequent resort to Medical Microscopy, I urge that every practitioner of medicine should, in default of a better instrument, provide himself with one of Beck's little ten-dollar microscopes, which, as I show you here, will display even "pale granular tube-casts" with distinctness. Perhaps this recommendation will be severely criticised, but my excuse for making it is, that it is better to discharge a duty imperfectly than to neglect it utterly, and also that every doctor who has once found out how much assistance even such a feeble aid gives him in his practice will very soon resolve to benefit himself and his patients by procuring a good microscope, although he may at first be compelled to borrow the money to pay for it.

3238 CHESTNUT STREET.

#### AN ABSTRACT OF REMARKS ON THE PRACTICAL SIGNIFICANCE OF CRYSTALLINE AND OTHER URINARY SEDIMENTS, EXCEPT TUBE-CASTS.

Read before the Clinical Section of the Philadelphia County Medical Society, January 31, 1882,

BY JAMES TYSON, M.D.

**I**N the first place, no crystalline or other urinary sediments are of any significance unless they are present in urine at the time it is passed or immediately thereafter. Nor can the occasional appearance of these sediments have any significance. They should occur continuously, or at least for several days in succession.

Secondly, of the urinary sediments referred to, I will consider only the following:

1. *Uric acid and urates*.—They indicate insufficient ingestion of fluids, imperfect oxidation of the proximate principles which go to make up food, or excessive acidity of the urine as the result of which they are precipitated. Such conditions may result in the undue accumulation of these substances in the blood, or their deposit as sediments in certain parts of the urinary passages, as the pelvis of the kidney, ureters, and bladder, in such quantities as to form calculous aggregations with the symptoms which usually attach to them.

The former—that is, undue accumulations in the blood—gives rise to gout or the condition to which the name lithæmia has been applied, and of which the symptoms have been well described by Da Costa in a recent paper.\*

Uric acid is very easily recognized by the rhombic shape or some one of its variations: if there is any doubt about any of these forms, it may be removed if it be remembered that uric-acid crystals are invariably stained yellow, which is true of no other crystalline sediment of the urine except the urate of ammonium, which exists only in spherules similarly colored, but by their shape easily distinguished. Amorphous urates of sodium and potassium, which frequently accompany uric acid, may be recognized by their pink, fawn, or brick-dust hue, and their solubility by warmth. In form they are not distinguishable from any other amorphous matter.

A good method of dissolving amorphous urates—which often fall in cold weather during the transit of a specimen from the patient's house to the doctor's office, and make the detection of other more important sediments difficult—is to place the bottle for a few minutes in a pitcher of hot water.

The treatment of uric-acid and uratic sediments is by diluents of an alkaline or even neutral reaction. The citrates, acetates, and carbonates of the alkalies, *freely* diluted, in most instances speedily dissipate these sediments. Even the use of a quart of plain water in addition to that ordinarily ingested in the twenty-four hours will have the desired effect. And I am certain that

\* American Journal of the Medical Sciences, October, 1881.

the effect of the chemically-indifferent mineral waters which are so much advertised and consumed in this country is due to the dilution they afford.

With regard to the solution of uric-acid calculi in the urinary passages, the experimental researches of Roberts, of Manchester, England, have shown that by the administration of alkalies it is at least possible to prevent them from growing larger. Elimination by aperients, especially by the natural aperient mineral waters, as Hunyadi and Friedrichshalle, is efficient in relieving the kidneys of a part of their work.

2. *Sediments of oxalate of lime*, which are readily recognized by their octahedral and dumb-bell forms, are also the result of mal-assimilation, indigestion, or the ingestion with the food of substances containing large amounts of oxalic acid, as the pieplant, sorrel, and tomatoes. Their significance also depends upon their permanence. If permanent or sufficiently abundant, they may cause irritation of the urinary passages similar to that resulting from uric-acid accretions.

The treatment of oxalate-of-lime sediments is that of the mal-assimilation and indigestion of which they are the symptoms. A solvent treatment of oxalate-of-lime calculi in the body is admitted to be impossible; but the same method of treatment which tends to prevent the formation of uric-acid sediments will prevent the formation of oxalates, as they are both the result of the same conditions.

3. *Phosphatic sediments*.—These include the crystalline triple phosphate, phosphate of lime, and amorphous phosphates. They occur only in alkaline urine, and if present when the urine is passed or soon thereafter—when alone they are of any significance—they indicate that the urine is alkaline at such time. The result of a constant condition of this kind, which, it is important to remember, may occur from the excessive administration of alkaline remedies, may be phosphatic accretions in the urinary passages. These may occasion the same symptoms of irritation as those of uric acid and oxalates.

As to *treatment*, it is acknowledged to be impossible to produce by medication such a degree of acidity of the urine as will dissolve phosphatic accretions of any size; but here, again, the natural acid reaction of the urine may be restored and kept up

by the administration of benzoic acid, which is, in my experience, the only remedy to be relied upon for this purpose. Phosphatic sediments often accompany the pus and mucus which are the result of inflammation of the bladder, but it is questionable whether they as sediments add to the inconvenience of these affections. This is chiefly due to the viscid, glairy product of the action of alkalies on pus, which is the principal cause of the difficult and painful micturition which attends this condition.

Serious errors in practice are often made by the administration of alkaline mineral waters in these conditions of phosphatic sediments, these waters being indiscriminately resorted to in all bladder-affections, without regard to accurate diagnosis.

4. *Urate of ammonium* appears in the shape of yellow spheres in urine of alkaline reaction, under the same circumstances as those under which the phosphates are found.

## TRANSLATIONS.

POISONING FROM IODOFORM DRESSINGS.  
—In *La France Médicale*, Nos. 30 and 31, for 1882, is published a clinical lecture by M. Dentu upon the surgical use and dangers of iodoform, in which a *résumé* of several recent articles upon this topic is given. There are now upon record eleven cases of fatal result following the use of iodoform as a dressing, in which it is almost certain that death was due to the absorption of the drug. Many others have been reported where dangerous or disagreeable phenomena were observed. The symptoms of intoxication in some of the cases came on at once, and in others not for several days: in one case referred to in the lecture they did not appear until a week after the iodoform had been discontinued. The principal symptoms are general malaise and depression, faintness, headache, loss of appetite, and a persistent iodoform taste in the mouth. In some cases there is a slight temporary increase of temperature. Mental depression or excitement is especially noticed. Finally the pulse becomes accelerated, soft, and feeble; in some cases the pulse is very rapid,—150–180,—while the temperature remains normal, or only slightly elevated: the thermometer, therefore, does not give



any indication of the gravity of the poisoning. The cerebral phenomena are commonly those of delirium; but there have been observed, especially in children, symptoms resembling those of meningitis, such as coma, contracture, inequality of pupils, and rapid pulse, without marked elevation of temperature, a case of which (by Schede) is briefly referred to in the paper. In adults a suicidal tendency has been noticed. These accidents have occurred especially where the iodoform has been freely applied to recent wounds or large raw surfaces. [From the very free use at present of this agent, in the German hospitals especially, it is surprising that, comparatively speaking, so few bad results have been reported. Possibly idiosyncrasy may explain the extraordinary susceptibility of some, while others, under like circumstances, escape.—TRANS.]

THE INFLUENCE OF CERTAIN REMEDIES UPON THE MILK-SECRETION.—As the result of a clinical and experimental investigation, Dr. Max Stumpf, of Munich, gives the following as his observations of the effect of certain remedies upon the secretion of human milk:

a. Alterations in quantity of the milk.

1. Iodide of potassium brings about a considerable decrease in the total quantity of milk.

2. Alcohol, morphia, and lead do not alter the quantity secreted.

3. Salicylic acid appears to increase slightly the flow of milk.

4. Pilocarpin is not a remedy furthering the milk-secretion.

b. Alterations in the quality.

1. Potassium iodide disturbs the glandular functions so much as to lead to uncertainty as to its qualitative effects.

2. Alcohol and alcoholic drinks increase only the fatty constituents of the milk; as dietetic agents for the purpose of increasing the milk they are, therefore, to be discarded.

3. Lead, morphia, and pilocarpin scarcely, if at all, affect the quality of the milk.

4. Salicylic acid appears to increase the sugar.

c. Discharge of poisons in the milk.

1. Iodine appears quickly in the milk, and in man rapidly disappears after the discontinuance of its administration; but in the herbivora it is more persistent. As regards the proportion of the iodine discharged in this way, it bears no constant

relationship to the dose taken, and varies in different individuals. "The therapeutic application of iodized milk is therefore out of the question." The drug is discharged not in the form of alkaline salt, but in some combination with casein.

2. In the herbivora, alcohol does not pass over into the milk.

3. Lead appears only in traces, but remains for several days after the ingestion of the remedy has ceased.

4. Salicylic acid, when given in large doses, appears also in very slight quantity in the milk, in man rather more than in the lower animals.—*Deutsches Archiv für Klin. Med.*, January, 1882.

DOUBLE PLACENTA.—M. Tarnier reported to the Académie de Médecine the following curious case (*La Presse Médicale*, February, 1882). After a normal delivery the placenta appeared at the vulva, from which it was easily displaced by gentle traction; but it was found to have still some attachment within the vagina. Shortly afterwards an accessory placenta was extruded, weighing one hundred and forty grammes; it was united to the former by a membranous band. The diagnosis of double placenta rests upon the existence of vessels in this band; for when the difficult delivery is caused by abnormal adhesions or by clots entangled in the membranes, vascularity will be absent.

MASSAGE OF THE EYE FOR HYPOPYON.—Dr. Just has reported rapid absorption of pus in several cases of hypopyon following light friction of the globe through the lower eyelid.—*Centralblatt für Prakt. Augenheilkunde*.

DEATHS FROM POISONED WOUNDS IN INDIA.—During 1880 no fewer than 968 deaths were registered from snake-bite in the provinces of the Punjab, against 818 in 1879, and 752 in 1878. The deaths from hydrophobia show, unhappily, an enormous increase, the number of victims from this cause amounting to 107, against 69 in 1879; 286 deaths were caused by suicide, and 67 by wild beasts.—*British Medical Journal*, April 1, 1882.

AFRICAN SUBSTITUTE FOR TEA AND COFFEE.—Schlagdenhauffen, of Nancy, has discovered in the seed of an African plant, known by the name of "la pola," both caffeine and tannin. It is used by the Arabs to improve impure water. In a note read before the Académie des Sciences he states that he considers that "la pola" may rank in utility with tea and coffee.

## PHILADELPHIA MEDICAL TIMES.

PHILADELPHIA, MAY 20, 1882.

### EDITORIAL.

#### OCCUPATION FOR THE INSANE.

WITHIN the memory of men still living, the treatment of the insane consisted principally in seclusion,—a method of management having for its object rather the protection of society than the restoration of the patient suffering with mental disorder. From the time when maniacs were chained to a post and publicly exhibited as objects of curiosity upon the payment of a small fee, to the present, when the disorder is regarded as physical and not psychological, requiring judicious and skilful treatment quite as much as any other form of bodily infirmity, constitutes a period of progress in therapeutics characterized by improvement more material and lasting than any which preceded it.

The need of providing mental occupation for certain forms of insanity may seem at first sight to be less imperative than is supposed by some who have had a large experience with this class of patients; but in many large institutions for the treatment of mental disorder it is found not only useful but conducive to the recovery of patients that work as well as recreation shall be provided. In the City Asylum for the Insane at Ward's Island, New York, out of more than a thousand inmates, about four hundred are available for work of various kinds, and are able to pursue some light employment for seven or eight hours a day. It might be expected that they would show unwillingness to labor; but this seems not the case: on the contrary, they often exhibit much enthusiasm for the work. Of course care and discretion are required in allowing the use of tools, and

the patients are searched each night to see that they have not secreted any. Should an access of insanity occur, so that they become sullen or flighty and refuse to work, they are allowed to remain idle until it passes off, when they are glad to begin again. Occasional interruptions for recreation and exercise in the open air are practised in order to overcome restlessness. In the mechanical departments a sane foreman is required to superintend their work. Dr. MacDonald, the superintendent, aims to give to each one the work he is accustomed to, or something related to it, and a few of the common trades are in constant operation. For instance, we learn from a *Tribune* reporter that all the carpenter-work, bricklaying, and general repairing are done by the patients; in the kitchen the only salaried officer is the cook, and the engine-room and boiler-room are attended to entirely by patients. In the summer a large number are engaged in farm-work. All the clothing in the institution is made by patients familiar with tailoring; others are employed in the shoe-shop, paint-shop, and tin-shop; and recently printing-presses have been put up, on which all the official matter of the department will be printed, and it is in contemplation, also, to do all the city printing here. It is likewise proposed to establish a weekly paper entirely composed, edited, and published by lunatics,—a novel idea, but perfectly feasible; and, in the words of the superintendent, "it won't be such a crazy paper either."

Dr. MacDonald finds that the great majority of patients are happier and more docile when employed, and he is satisfied that they are capable of doing many things which they have hitherto been supposed unfit for.

With the proviso that it shall be always as carefully conducted and as ably superintended as in the present instance, it is evident that the furnishing of congenial occupation is a valuable adjunct to the treatment of insanity; but the economy of

administration and profits upon the labor must always be kept subordinate to the main object,—the rational treatment of the insane with a view to their recovery. If abused, it might degenerate into an instrument of injustice and inhumanity to an unfortunate and helpless class of patients.

## PROCEEDINGS OF SOCIETIES.

### THE PENNSYLVANIA STATE MEDICAL SOCIETY.

THE Medical Society of the State of Pennsylvania held its Thirty-Third Annual Session at Titusville, Pennsylvania, on May 10, 11, and 12, 1882, in the large hall over the Battery Armory, with Dr. Jacob Zeigler, of Mount Joy, in the chair. The attendance of the delegates was unexpectedly large, numbering over one hundred and fifty. The programme, as arranged by the Committee of Arrangements, of which Dr. William Varian, of Titusville, was chairman, was strictly adhered to.

On Wednesday morning, May 10, at 10 A.M., Dr. Henry Parden, of Titusville, opened the meeting with prayer. After Dr. William B. Atkinson had called the roll of delegates, the address of welcome was given by Dr. G. O. Moody, of Titusville, in a speech short but eminently to the point.

The reports of delegates to other societies were handed to the Secretary.

Under the head of "New Business," Dr. Henry H. Smith submitted the following resolutions, which were seconded by Dr. John Atlee, of Lancaster, and were unanimously adopted:

"Resolved, That this Society reaffirms its adhesion to the Code of Ethics as adopted by the American Medical Association.

"Resolved, That the delegates of this Society to the meeting of the Association in 1882 be instructed to enter an early protest against the admission to the Association of delegates that object to and do not observe said Code of Ethics in all its recommendations."

A communication was also presented from the Philadelphia Medical Society endorsing the sentiments of the resolution.

During the discussion there was a unanimous expression of opinion against the recent hasty action of the Medical Association of the State of New York.

The Secretary was directed to forward a copy of the minutes of the proceedings to other societies. It was proposed that the Convention meet in Warren on Friday, instead of in Titusville. This motion was lost in consequence of there being one dissenting voice, which, by the laws of the Society, precludes

any alteration in the programme. It was ultimately arranged that the Convention should visit Warren on Saturday, accommodations being provided for all who signified to the Secretary their intention of going.

The Committee on State Board of Health reported the failure of the passage of a law, at the last meeting of the Legislature, creating a State Board of Health, and recommended that this important measure should be urged upon the Legislature.

There being no further business, the Society adjourned until two o'clock in the afternoon.

On reassembling, the following amendment to the constitution was considered and voted down: "Every member of a county medical society in Pennsylvania shall, so long as he is in good standing, be a member of the State Society and a delegate to its annual session."

Dr. H. L. Orth, of Harrisburg, being absent, the address in Surgery was omitted, and the afternoon was devoted to the reading of volunteer papers. Dr. S. S. Schultz, of Danville, Pennsylvania, read an interesting paper entitled "Gheel." He described at length the town and its surroundings, and the habits of those who from generation to generation billet and care for the insane; but the lecturer did not seem to be in favor of the method, and considered it open to criticism, especially concerning what is known of the plan of treating violent and troublesome cases in cottages.

Dr. John V. Shoemaker, of Philadelphia, read a paper upon the "Oleates and Oleo-palmitates in Skin Diseases," at the same time exhibiting a number of new preparations, such as the oleates of zinc, copper, aluminium, iron, arsenic, and silver, describing their method of preparation, and setting forth their respective therapeutic values.

### OLEATES AND OLEO-PALMITATES IN SKIN DISEASES.

The advantages which they possess over ordinary ointments he considered to be: First, their deep penetration. The oleic acid in the combination gives them active solvent powers and facility and ability to penetrate rapidly into the animal tissue, rendering any chemical ingredient with which it is combined more active and effective in dermic medication. Secondly, freedom from rancidity. The same acid held in the combination will always keep the fat with which the oleate is mixed pure, sweet, and free from rancidity. Thirdly, cleanliness of application. The rapid absorption of the oleate into the tissue will prevent any unpleasant disfigurement of the parts, will not stain the linen, and will give comfort and ease in their application. Fourthly, economy. The oleate should not be rubbed in vigorously, like the ordinary mechanical ointments, which require considerable friction: they only require to be lightly smeared or applied over the surface in very small quantities. Fifthly, antiseptic action.

The oleic acid in combination has also a most happy and effective action in rendering the oleates antiseptic or deodorant upon all discharges and suppurating surfaces.

Dr. Traill Green, of Easton, read a paper on "Medicine and Something More." It was full of humor and of good advice to young and especially indiscreet practitioners,—how they could educate themselves and should train their patients; how to save their reputations and their patients' feelings.

In referring to different contagious diseases, he said that in a practice of fifty years he had never known any one to have the smallpox after being successfully vaccinated by himself.

Dr. E. E. Montgomery, of Philadelphia, followed with a paper on

#### PROCIDENTIA AND ITS RELIEF.

After reviewing the opinion of authorities upon the true uterine support, the lecturer assumed that the vagina was the support in the normal condition, and the ligaments nature's reserve forces.

Prolapse occurs as a result of three conditions: 1st, pressure from above; 2d, increased weight of uterus; and, 3d, want of support below. The most potent agents in its production are engorgement of the uterus, frequent child-birth, laborious exercise, early resumption of domestic duties, neglect of laceration of the perineum, and the frequent use of a widely expanding bivalve speculum.

There are three stages: 1st, simple descent; 2d, incomplete prolapse; and, 3d, complete prolapse or procidentia.

The earlier symptoms are pain in back and limbs; bearing-down, burning pain in pelvis and groins, and sensation of pressure upon fundament, followed later by vesical and rectal distress and tumor at the vulva.

Procidentia is distressing, from friction against clothing and limbs, and from being bathed with urine, often producing ulceration. The indications for treatment are, first, to replace the uterus, and second, to prevent the recurrence of the disorder. The latter comprises mechanical and surgical measures. The mechanical support is by means of pessaries, which are unpleasant, ineffective, and not without danger. In reviewing the various surgical measures proposed, he claims that they all, with the exception of Le Fort's, fail to give permanent relief, for two reasons: 1st, they do not elevate the uterus to its normal position, and thus facilitate the absorption of hypertrophy and the atrophy which should occur with age; 2d, they do not afford sufficient support in the upper third of the vagina, allow the enlarged organ to sink like a wedge into the narrow canal, and by pressure cause the absorption of the tissue below, until it is again outside. These causes of failure are obviated by Le Fort's operation, which, by constructing a bridge of tissue in the centre

of the vagina, supports the uterus. It forms a double vagina. Tracey greatly improved the operation by restoring the perineum at the same time. The only drawback to its invariable performance is that the adhesion of the vaginal walls would greatly complicate delivery.

A case was given in which the operation was successfully performed.

Dr. John G. Lee, of Philadelphia, submitted a paper on the subject of "Homicides in the City and County of Philadelphia." After referring to the recent great advances in the science of medicine, he said that "from December 31, 1871, until January 1, 1882, out of a total number of 12,936 cases of death investigated by the coroner of Philadelphia, 323 cases were deaths from homicidal violence. As the population of a city increases, so naturally the number of homicides might be expected to augment in a similar ratio; but in no case does the ratio appear to bear any relation to the population. In 1873, when the lowest number of homicides was committed, the ratio was 30 to 10,000 souls, while in 1875 and 1876, when the greatest number occurred, the ratio was 55 to 10,000. Of the 323 cases, 26 were colored people, and 297 whites. As might be expected, we find deaths from violence occurring more frequently at the period of life when, the bodies and intellects of the human species being fully matured, their passions are most difficult to control, the highest number being reached between the ages of 20 to 30 years, the next highest between 30 to 40 years, the lowest occurring between 80 to 90 and from 5 to 15 years: 262 of the slain were adults, and 61 were minors; 174 of the 323 were married. The greatest number of homicides occurred during the month of July, and the fewest in the month of March. Making the months in groups for the past ten years, we cannot, therefore, do else than admit that the impulsive actions excited by human passions, though not subject to special rules and laws, must be the physiological manifestations of physical phenomena exerting a disturbing influence over cerebral action."

#### REMARKS ON INTRA-NASAL SURGERY.

Dr. Carl Seiler, of Philadelphia, read a paper on intra-nasal surgery. In it he recounted some of the surgical operations lately introduced for the relief of nasal stenosis, which he considers the prime cause of the symptoms of nasal catarrh. The obstructions to breathing through the nose, which could be removed by surgical means, were divided into two classes,—viz., (1) those produced by swelling of the mucous membrane, or hypertrophic enlargement, forming soft tumors growing from the mucous membrane; and (2) by hard, bony, or cartilaginous projections into the nasal cavities. The former class was again divided into permanent and temporary. The doctor then went on to describe the opera-



tions advisable for the removal of these obstructions, and said that he had found that the most satisfactory and at the same time least painful method of removing those swellings which are situated at the anterior portion of the turbinated bones, and which are called anterior hypertrophies, was by means of the galvano-cautery knife, describing the different steps of the operation. He said that it is of great importance in this operation to have the platinum loop at the proper temperature; for if it is too hot considerable bleeding will follow the incision, and if not hot enough the application is very painful. With the galvano-cautery batteries in the market it is impossible to graduate accurately the temperature of the knife, and he showed a battery devised by himself for the purpose, which is so arranged that the zinc plates are suspended above the cups containing the carbons and fluid, and may be immersed to any extent by depressing with the foot a treadle on the outside of the box containing the battery. The amount of surface of the zinc plates exposed to the action of the acid determines the amount of electrical current, and consequently the amount of heat in the loop of the knife.

The immediate result of the burn is the formation of an eschar and of a certain amount of acute inflammation, which stands in a direct ratio to the extent of the burn, and therefore not too large an incision should be made at any one sitting. The ultimate result of the operation is the formation of bands of cicatricial tissue, which by its contraction as it becomes firm binds down the swellings and thus removes the stenosis. In the same manner a curved galvano-cautery knife is used to cauterize the hypertrophied adenoid tissue in the vault of the pharynx above the soft palate. These operations, if proper care be exercised, are not at all dangerous or painful, and on that account are preferable to the application of chemical caustics, which, as a rule, give great pain to the patient and are in the end not as effective as the galvano-cautery. The author then went on to describe the method employed by him for the removal of hypertrophies situated far back in the nasal cavity and of nasal polypi. For these operations he employs a wire snare invented by Dr. Jarvis, of New York, the steel-wire loop of which is thrown around the hypertrophy or polypus, and by gradually reducing the size of the loop the tissue engaged by it is snared off. To prevent a return of polypi he advises the cauterization of the stumps with the galvano-cautery knife. This method of operating he had found to be attended with very little, if any, pain and hemorrhage. Localized thickenings, which are not infrequently found on the cartilaginous septum in old cases of nasal catarrh, and which produce partial nasal stenosis, may also be removed with the wire snare; but when these localized

thickenings have become ossified, or when the obstruction in the nose is due to an exostosis of the bony septum, or to an enlargement of the turbinated bones, or finally to a bony spur from the palatine process, neither the galvano-cautery nor the wire snare is of any avail, and the obstructions must be removed by drilling them away. For these operations dental engines have heretofore been used to hold and rapidly revolve the drills and burrs, just as the dentists use them for excavating decayed teeth. Within a short time, however, the author stated that he had substituted for the dental engine a small electric motor, invented by Mr. Griscom, and manufactured by the Electro-Dynamic Company, of Philadelphia, to which the hand-piece carrying the drills and burrs is attached either directly to the spindle of the motor, or by means of a short flexible shaft. The speed of the drill can be regulated to a nicety by means of the automatic adjustable battery which belongs to the motor, from a few hundred to ten thousand revolutions per minute, and its power is at least equal to that of the dental engine. When used for operation, the apparatus is suspended from the ceiling by cords, which run over pulleys and carry counter-weight so as to balance the motor in any position in mid-air and in front of the patient, and to keep it in any position it may be placed in. This arrangement relieves the hand of all weight, and thus a much more delicate manipulation of the tool is possible than can be obtained with the dental engine, for in the latter instrument the hand has to support the weight of the hand-piece and flexible shaft or arm, and, besides, a good deal of the motion of the foot working the treadle of the fly-wheel is communicated to the hand, making it unsteady. The tools used are much the same as those employed by the dentist, except that when the bony obstructions are far back in the nasal cavity they should be longer in the shaft.

The operation is performed by riddling the bony obstructions with holes made with a cutting drill, and the substance between the holes is then broken down with a coarse burr, and finally any shreds of mucous membrane and spicules of bone are trimmed off with a pair of scissors. Usually but very moderate amount of inflammation of the mucous membrane in the nose follows the operation, and the wound heals readily in a few days.

As a rule, it is found more convenient for the operator to place the patient under the influence of ether, so that the involuntary struggles of the patient do not interfere with the operation: this is, however, not absolutely necessary, as the pain is not nearly so great as might be expected.

For the relief of the obstruction caused by deviation of the septum, a variety of operations have been recommended, but the doctor stated it as his opinion that the simplest opera-

tion, the easiest to perform, and at the same time the most satisfactory, is the following. With a strong pair of forceps, which has inserted into one of its blades a number of knife-blades at right angles to the surface and arranged in the shape of a star, the septum is punched at its greatest curvature, by introducing the blade carrying the knives into the open nostril and the unarmed blade into the closed one, and then compressing the handles. The punch is then removed, and with a pair of forceps having flat blades the septum is forcibly straightened, which becomes possible since the triangular pieces produced by the cut made with the punch lap over, and thus the distance from the base to the top of the septum becomes diminished. A wooden or ivory plug is then introduced in the formerly-closed nostril, with a view to keep the septum in its new position, and is left there until the parts have sufficiently healed to remain straight without that support. This operation is also not very painful, and can readily be performed without ether.

For the removal of necrosed bone and for treating caries of bone in the nasal cavity the lecturer said that he knew of no better means than the dental drill and burr attached to the electric motor, for the delicacy of movement of the instrument allows the hand at once to detect when the tool has penetrated the diseased structure and sound bone is reached.

Deep ulcerations of the mucous membrane in the nasal cavity he finds do not readily yield to the usual applications of chemical caustics, and therefore he treats them either with the galvano-cautery knife or the corundum cone mounted on a long shaft and revolving rapidly in the electric engine. When the ulcers are small, the charring of the surface with the glowing platinum loop answers every purpose, and is not nearly so painful as the application of solid nitrate of silver. If they are large, however, it seems best to freshen up the surface with the corundum cone, which when rapidly revolving enables the operator to remove all diseased tissue without injuring the healthy.

The paper closed with a few remarks on the medicinal after-treatment of nasal catarrh, and was illustrated by the exhibition of the various instruments described.

In the evening the President, Jacob L. Zeigler, of Mount Joy, delivered, in the Academy of Music, the annual address. Afterwards receptions were tendered the visitors at the residences of Mayor Caldwell, Dr. Varian, and Dr. Moody, all of which were largely attended and proved most happy events.

Thursday morning, May 11, at 9 A.M., the Rev. J. A. Maxwell opened the proceedings with prayer.

After reports from county societies and that of the Treasurer, Dr. B. Lee, of Philadelphia, Dr. C. S. Turnbull read a paper upon "Defective Hearing of Locomotive Engineers," by Dr.

L. Turnbull, of Philadelphia. The report concluded by recommending that examinations of engineers be made every two years, and that certificates be withheld until after examination, and that when firemen present themselves for promotion, special precaution be taken and instruction given that ear-troubles are likely to be induced by their occupation, and that they should report them at once and be treated.

The committee in its report stated that the Pennsylvania Railroad Company has adopted regulations for the examination of the hearing of all those in its employ, and no doubt other railroads will follow the example, the subject being of interest and importance to them as well as to the travelling public. The report also contains a comparison of the results of the examination of railroad employes and the military service, showing its importance both to the army and the navy of the United States. The reports of the health bureaus of the Prussian and Württemberg armies were given for 1874-78, showing that during those four years there were removed from disability on account of ear diseases 1883 men. Dr. Turnbull added to the report an appendix containing new facts and observations from patients, with the opinion of engineers regarding the great utility of these examinations and the proper treatment of such defective individuals.

The address on Mental Disorders was delivered by Dr. Charles K. Mills, of Philadelphia, on "Criminal Lunacy." The psychology of vice and crime, the relations of crime to insanity, criminal responsibility and the best methods of determining it, and the proper disposal of the criminal insane, were among the topics briefly discussed. The case of Guiteau received some attention, the doctor holding that his insanity was probable, but that he should not therefore escape punishment. The necessity of modifying existing laws relating to the insane, and the importance of establishing in Pennsylvania and elsewhere special criminal lunatic asylums, were among the subjects discussed and advocated.

Dr. W. H. Daly, of Pittsburg, read a paper on "Some Questions relating to Tonsillotomy," and Dr. J. A. Lippincott, of the same city, followed with an interesting paper on "Abscess of the Orbit," both of which were duly referred.

#### BORACIC ACID IN EAR-DISEASE.

Dr. Charles S. Turnbull, of Philadelphia, read a paper entitled "Powdered Boracic Acid in the Treatment of Chronic Purulent Inflammation of the Middle Ear (Otorrhoea)," in which he strongly recommended the use of powdered boracic acid in the treatment of chronic purulent inflammation of the tympanic mucous membrane in the antiseptic, or what might be more accurately termed the dry, method of treatment. The syringe

he regarded as a thing of the past, except for the removal of impacted cerumen, foreign bodies, etc. The marked success which has attended the dry, antiseptic treatment of these cases has led him to advocate its use in this most common form (in this country) of aural disease. Up to about two years ago he examined and treated cases of chronic purulent middle-ear inflammation with inward misgivings, because he was a non-believer in all the methods in vogue, and had learned by experience to have no faith in the prescribed forms of cleansing, medicating, and managing the ears of such of his patients as suffered from chronic otorrhœa.

Inflammation of the drum-cavity (tympanum) is so frequent in this country that its characteristic symptom, otorrhœa, is often regarded as synonymous with the proper and self-defining name, "chronic purulent (or suppurative) inflammation of the middle ear."

Whatever causes tend to provoke an inflammation of the mucous membrane lining the middle ear or its appendages may lead to a perforation of the membrana tympani and discharge from the ear.

He mentioned that it oftenest occurs in infancy from dentition, or as a sequence of the exanthemata, inherited taints (tubercle and syphilis); by inflammatory extension from the gastro-pulmonary mucous membrane, nasal, post-nasal, supra-post-nasal, and tubal spaces, and the much-vaunted irrigating treatments for the same; last, but not least, from exposure, carelessness in cleansing the meatus, too forcible blowing of the nose, bathing, the use of aqueous solutions of Castile soap, instillations of olive oil, glycerin, etc. The invariable tendency of most forms of acute purulent inflammation of the middle ear is to get well of themselves, if it were not that the peculiar conditions of the parts provoked the fermentation of stagnant secretions, the formation of pus "from the immigration of bacteria" (Loewenberg), and the meddlesome interference of those who never pause to consider the conditions present, but pursue time-dishonored plans of guess treatment, which are, as a rule, dependent upon the fragile experience of empiricism. The curing—i.e., the stopping—of a purulent discharge from the ear is the only desideratum, it would seem, to many sufferers and their medical attendants. He said that, as a rule, it is not the discharge in itself which does harm; it is a too heroic treatment and the subsequent process of cicatrization, which to a greater or less extent damages the hearing-power. It calls for intelligent management as well as treatment, so that the functions of the acoustic apparatus (the tympanum and its appendages) may not only be preserved intact but kept in motion.

He has been met with the objection that "if these discharges from the ear can be stopped, the disease will go to the brain." This idea had its origin in the fact that, hereto-

fore, such heroic measures were used to check the discharge, and caustic solutions were poured into the ears, because no intelligent treatment was employed, and, as in the majority of cases no careful ocular inspection of the parts was made, extension of disease to the inner ear, or even to the brain, resulted.

Concerning the "insufflation" of powder into the external auditory meatus, he has never been satisfied with the procedure, and says he was always forcibly reminded, on attempting such "insufflation," of the familiar trick of trying to blow a light paper ball into a bottle which lies on its side. The harder one blows, the more certain is the ball to fly out, rather than into the empty bottle. Precisely the same thing occurs when the attempt is made to insufflate powders into the auditory meatus; because the return current carries it all out again, leaving little or none in the meatus. The operator generally gets the most in his face. This point will be appreciated by those who have attempted to employ powdered iodoform in this way. Better drop one-fourth of the quantity proposed to be insufflated through a clean speculum. The ear is not to be syringed; it should be cleansed with absorbent cotton. A meatus as tender and swollen and excoriated as it usually is in otorrhœa can be cleansed with cotton on a probe. It cannot be done by guess-work, or in the dark. Unless the meatus be thoroughly illuminated, every pledget will, in the majority of cases, except in experienced and careful hands, impinge against one or the other side of the wall of the meatus, and cause pain, exudation, etc.

With the forehead mirror adjusted so as to illuminate the parts, the (outer) cartilaginous portion of the meatus can be thoroughly cleansed. Having gone so far, a speculum is carefully introduced, *illuminating as he proceeds*, and through this (unless the meatus be unusually large, when the speculum can be dispensed with) the inner (osseous) portion can be cleansed down to the membrana tympani, or even farther. So much for the meatus. Now the tympanum must be cleansed. He never attempts to wipe through or into a perforation, but while the patient, by Valsalva's method, blows out any intra-tympanic secretion, wipes it up; or, in case of Valsalva's method being impossible or impracticable, he forcibly inflates with Politzer's air-douche, and so frees the tympanum by blowing any collection into the external meatus.

As a rule, the application of any powder becomes painful when it enters the tympanic cavity, and more especially so if it dissolves and runs down into the Eustachian tube, through which experience has taught him he dare not allow even pure water to pass, if in any way consulting the comfort of the patient. Solutions of borax, or, better, boracic acid water and glycerin, may be used if the sensitiveness of the parts or the character of the

secretions collected therein does not allow the use of the cottoned probe. Experience in the procedure of cleansing is absolutely necessary to success, and the operator must make up his mind conscientiously to wipe out the meatus patiently and carefully under a good illumination.

Having cleansed the meatus, the speculum is to be removed and thoroughly dried, inside as well as outside, and with it *in situ* the powder is to be poured into the speculum *ad libitum*. As the powder is filled into the meatus, through the speculum, it is packed, layer upon layer, not tightly, but firmly, meanwhile gradually withdrawing the speculum until it reaches the mouth of the meatus.

He has adopted the dry antiseptic method and the exclusive use of *powdered boracic acid*, which, in all chronic cases, he packs and repacks into the meatus until there is a cessation of all discharge.

He claimed for his father the credit of having first introduced "Bezold's antiseptic treatment" and perseveringly employed and taught the use of boracic acid powder for the treatment of "otorrhœa." The great mistake was in the fact of many experimenters not having observed Bezold's instructions,—viz., *that the boracic acid must be finely powdered*. Oftentimes one packing is enough. In other cases the packed powder was washed out in a few days, but he persevered, and has always been rewarded for any trouble in filling and repacking. If the discharge ceases, and leaves a hardened mass of discharge and powder, etc., filling the meatus, it must be removed,—not by force, nor by syringing. It must be softened by the instillation of warm *fluid cosmoline* (petroleol), which has the charming recommendation of not becoming rancid by heat. As the mass softens, it may be delicately picked loose and blown out of the meatus by the rubber bag of a Politzer's air-douche.

By this method perforations are healed, tympanic mucous membrane becomes almost normal in appearance, purulent secretion and all odor are removed, and "running ears" are absolutely cured.

Solutions of boracic acid powder, in equal parts of glycerin (which will partly dissolve it) and water, forty grains to the ounce, are to be recommended in acute purulent inflammations of the middle ear, or even in chronic purulent inflammations, especially those occurring in small or unruly children. Such a solution should be warmed, well shaken, and dropped into the ear twice or thrice daily. Where perforations do not heal, on account of their great size, or sclerosis of tympanic mucous membrane, etc., he recommended most highly *powdered boracic acid*, suspended in fluid cosmoline, in varying proportions, warmed, *shaken*, and dropped into, such ears once or twice weekly.

Instruments used in aural surgery should

be kept in or dusted with powdered boracic acid. He had seen some forms of parasitic otorrhœas transferred from patient to patient, and even with the most careful surgeons a case of *aspergillus* is often followed by one or more fresh ones occurring in those of his patients who have been treated about the same time.

In this connection he stated that after careful microscopic investigations, and the study of clinical facts pertaining thereto, all the so-called varieties of *aspergillus* which are usually divided, according to their apparent color, into different species, are but one and the same fungus, as it undergoes the successive changes from white, yellow, red, or purple, to black, each representing successive stages of development of the same fruit, which, when fully matured, is *black* (*nigricans*).

Purulent tuberculous inflammation of the middle ear cannot be cured.

Borated cotton is of no use whatever in aural surgery, the ordinary absolutely clean absorbent cotton being preferable, and especially so when dusted with the dry powdered boracic acid. It is by no means an easy undertaking to pulverize the scaly crystals of boracic acid, and once in the mortar they must be bruised and pounded instead of rubbed. Careful pharmacists use a bolting-cloth to make the powder impalpable.

#### ACTION OF MYDRIATICS.

Dr. E. J. Jackson, of West Chester, read a paper on the "Comparative Action of Certain Mydriatic Alkaloids," in which he discussed the physiological and therapeutic properties of daturia, duboisia, and hyoscyamia.

In experiments on himself, two-thirds of a milligramme of each alkaloid hypodermically produced a temporary fall, followed by an increase, of the pulse-rate, giddiness, dryness of the throat, affection of the eyes, increase of urine, and headache. The subjective symptoms seemed most severe with hyoscyamia and least so with daturia; the pulse-rate was equally affected in all cases.

It was also sought to determine their local action on the pupils and accommodation. With the amount of the drug employed, dilatation began for daturia and duboisia at twenty-two minutes, and for hyoscyamia at twenty-one minutes, pupils dilating to the maximum. The accommodation fell from 9.75 dioptries to 4.8 D. for daturia, 3.2 D. for duboisia, 2.3 D. for hyoscyamia. Recovery of pupil and accommodation occurred simultaneously, for daturia at six days, for duboisia at six and one-third days, and for hyoscyamia at six and two-third days. The above results were the means of three trials with each drug in the same person. The writer thought that the results of this study seemed to favor the idea that the three drugs in question are physiologically identical.



## RODENT ULCER.

Dr. Joseph Hearn, of Philadelphia, read a paper calling the attention of the general practitioner to the early recognition and proper treatment of rodent ulcers, which he stated were a form of skin cancer and could be distinguished from the harmless ulcer by hardened margins. The treatment, he said, consists in complete removal, either by the knife or by caustic, especial care being taken to include the edges.

A communication was received from Dr. A. L. Kennedy, of Philadelphia, calling the attention of the Society to the fact that cinchona can be acclimated and successfully grown within the limits of the United States, and that the newly-appointed Commissioner is not indisposed to enlarge the work of his department, and it would be well for the State Society to encourage him.

The committee appointed to prepare a schedule of subjects and requirements of the Medical Society of the State of Pennsylvania, designed as a guide to medical examiners in ascertaining the fitness of candidates for the study of medicine, made a report, recommending a more general education of candidates. A minority report was submitted, when Dr. John Atlee, of Lancaster, moved that the report be recommitted for further consideration, and, speaking of the necessity of elevating the standard of education for those seeking admission into the medical profession, said that physicians a hundred years ago were more generally prepared in the way of a thorough education than at present. The motion to refer was agreed to.

## REGISTRATION OF PHYSICIANS.

Dr. Sibbet, of Carlisle, chairman of the Committee on Medical Legislation, submitted a report in reference to the act of the Legislature providing for the registration of all practitioners of medicine and surgery. The committee say that under this act they addressed letters to all the county medical societies and the prothonotaries in counties in which there were no societies, and received responses from forty-six out of sixty-seven counties in the State. From these it appears that 674 graduated from the University of Pennsylvania and 1020 from the Jefferson Medical College. The whole number of practitioners in the counties reporting is 2200, and of this number 619 are not graduates from any college. The report from Philadelphia shows 1554 registrations, of which 220 are homoeopathic and 210 from other institutions outside of the University of Pennsylvania and Jefferson Medical College in this city. There are 48 registered who are stated to be without any regular medical education. The committee say that the enforcement of the Registration Act is the first duty of the profession, and a committee should be appointed in each county medical society to supervise the work.

Dr. John T. Carpenter presented a preamble and resolutions adopted by the Judicial Council of the Society, providing that the Medical Society of the State of Pennsylvania request the different faculties that may have applications made to them under the provision of Section 4 of the Medical Regulation Act of Pennsylvania, to give each and every applicant a fair, full, and thorough examination in all branches taught in their own school and required of their own students, before endorsing their diplomas, and to refuse to endorse any diploma unless the holder is well qualified to practise his profession.

After a long discussion, the committee withdrew the paper.

The afternoon session opened with the report of the nominating committee, of which Dr. John Atlee was chairman. The following officers were selected for the ensuing year:

*President.*—Dr. Wm. Varian.

*First Vice-President.*—Dr. A. Hewson.

*Second Vice-President.*—Dr. E. P. Allen.

*Third Vice-President.*—Dr. A. Thayer.

*Fourth Vice-President.*—Dr. A. M. Miller.

*Permanent Secretary.*—Dr. W. B. Atkinson.

*Recording Secretary.*—Dr. Edw'd Jackson.

*Corresponding Secretary.*—Dr. John G. Lee.

*Treasurer.*—Dr. Benj. Lee.

*Committee on Publication.*—Drs. Wm. B. Atkinson, Benj. Lee, Albert Frické, Chas. S. Turnbull, Edw'd Jackson, J. V. Shoemaker, and J. G. Lee.

Norristown was selected for the next place of meeting.

The address in Hygiene was delivered by Dr. W. F. Muhlenberg, of Reading. It was a most interesting paper, which cannot be abstracted to do it justice. It considered fermentation and decomposition of all animal fluids and the several varieties of micrococci found therein.

The paper of Dr. William S. Little, of Philadelphia, upon "Subjective Traumatism of the Eye," was also well received. He discussed a condition of the eye resulting from the strain occasioned by optical defects, which induced impairment of vision and various inflammatory and diseased conditions.

Dr. Leffmann, of Philadelphia, read a paper on the medical relations of the prevailing food-adulterations, in which it was stated "that the general character of adulterations was not of a nature calculated to actively spread disease."

Dr. B. E. Mossman, of Greenville, read an interesting paper on "Puerperal Malarial Fever," in which he considered the diagnostic symptoms between true puerperal and puerperal malarial fever, and, as he lives in an especially malarial district, he could point with more than usual accuracy to the characteristic accompaniments of malarial poison in the puerperal state. The recurrence of rigors at stated times, and the free-

dom of the patients from high temperature, etc., serve, with an array of carefully reported cases, to illustrate the phases of this disease, which yields to quinine, is apt to recur, and almost always does so with each successive confinement.

In the evening a reception was given by the citizens of Titusville at the Oil Exchange. The building is a handsome one, and the auditorium one of the finest of its kind. The promenade concert commenced at 9 P.M. The banquet was at 11 P.M., and was followed by dancing, which was kept up long past the "wee sma' hours."

On Friday, May 12, the session convened at 9 A.M., and was opened by prayer by the Rev. F. S. Rowley.

Dr. Daly, of Pittsburgh, in the absence of Dr. R. S. Sutton, of that city, read the address in Obstetrics.

Dr. Sutton's paper gave a *résumé* of his experience in the study of abdominal surgery and gynecology in Europe. He mentioned in detail the operations of Billroth, Meyer, of Berlin, Langenbeck, Nussbaum, and others, and described the several modifications of various European operators for ovariectomy, laparotomy, etc.

Dr. Griswold, of Sharon, read a paper on "Herniotomy," and Dr. John B. Roberts, of Philadelphia, communicated a paper on "Excision of Cartilage in Nasal Occlusion due to Deviated Septum," which was read by Dr. Leffmann. A punch used to excise pieces of the septum was exhibited.

Dr. William Varian reported a case of ovarian polycyst in a woman of 39 years, which at its incipency, and for several years, had presented the appearance of a fibroid. Ovariectomy was performed, but the patient died on the twenty-first day. In commenting upon the case, Dr. Varian suggests that ovarian fibroids are more common than is generally supposed, the reason that they are not frequently encountered being that they do not usually attain so large a size as to demand operation; he believed that polycystic tumors may be a frequent termination of fibroids, due to a peculiar form of degeneration. In conclusion, he inquired if colloid polycysts are benign in their character, or do they possess the elements of malignancy? The inference from his remarks was that the fibroid was a benign form, but the colloid and cystic degeneration was in the direction of malignancy.

A paper on "The Use of Atropia," by Dr. E. Dyer, of Pittsburg, was read by title.

At the afternoon session, Dr. Shoemaker, of Philadelphia, submitted resolutions, which were adopted, thanking the physicians and citizens of Titusville for many courtesies extended, as well as for their universal display of cordial hospitality.

Papers were then read by title in the following order:

"Management of the Perineum during Labor," by Dr. Frances N. Baker, of Media.

"A Rare Case of Nervous Disease," by Dr. J. L. Stewart, of Erie.

"Hæmaturia," by Dr. William S. Roland, of York.

"Surgical Expedients in Emergencies," by Dr. R. J. Levis, of Philadelphia.

After the transaction of some unimportant business, the Society adjourned.

Thus closed one of the most satisfactory of the State Medical Society's meetings; and, although the sun did not shine once during the week, the delegates were warmed by a most cordial expression of hospitality on the part of the citizens of Titusville, who, undaunted by the recent loss by fire of three of their largest hotels, arose *en masse*, and, opening wide their doors, vied with one another in making their guests comfortable, and in welcoming us to their homes. C. S. T.

#### PHILADELPHIA COUNTY MEDICAL SOCIETY.

A CLINICAL conversational meeting of the Society was held at the hall of the College of Physicians, Philadelphia, January 31, 1882, Dr. H. Y. Evans, President of the Society, in the chair.

Dr. Blackwood exhibited a patient with large double scrotal hernia, and made a few remarks on the case (see page 554).

Dr. Garretson called attention to the configuration of the head of the patient and to his physical strength, and Dr. Blackwood said that the mental ability was decidedly above the average.

Dr. Heyl exhibited the specimen and read a paper on a case of malignant orbital growth (see page 554).

Dr. Seiler said he had detailed some time ago, before the Pathological Society, for Dr. P. D. Keyser, a case of tumor, a round-celled sarcoma of tear-gland, involving the gland itself, and about the size of a bean. The eye was not removed; the tumor was taken out, but returned again, and was again removed. It still retained its character as a round-celled sarcoma; a third return is probable, but the eye is not involved. Dr. Seiler did not think that a tumor could begin outside the eye and then pass into it; he had never seen such a case, but had seen the cornea pushed out three-quarters of an inch by a melanotic spindle-celled sarcoma, making the eye look like a horn.

Dr. C. S. Turnbull thought that the tumor, if it were a glioma-sarcoma, extended into the orbit through the optic nerve or its sheath. He thought that the tumor referred to by Dr. Seiler had originated in the choroid, ciliary body, or iris, and not in the retina or substance of the optic nerve.

Dr. Heyl said that when he saw the case

the cornea had sloughed away, and the interior of the eyeball could not be examined. He considered it possible for a tumor to work through the sclerotic, leaving the cornea for the time being intact, and referred to illustrations in Stellwag's work\* on the eye in confirmation of this opinion.

Dr. Richardson urged the importance of examining for parasites during post-mortems, as suggested by Dr. Henry. He had advised the students at the University of Pennsylvania to make such examinations in the dissecting-room, and since that time trichinæ had been found in several instances. In one of these, two post-mortem examinations were reported to have been made before the body was dissected, one by the physicians at the Philadelphia Hospital, another by order of the coroner, and yet neither autopsy was thorough enough to detect the parasites.

Dr. Tyson said that Dr. Leidy had pointed out that the common form of tenia, at least in the United States, was *T. medio-canellata*, and not *T. solium* as is commonly supposed.

Dr. C. S. Turnbull said that the anatomical differences between the two parasites accounted for the fact of the head of *T. solium* being so rarely found with the ejected worm. The unarmed variety was not able to hold on so well. In his experience, *santonin* was more successful when combined with sodium bicarbonate. According to Cobbold, *T. echinococcus* is not so common as formerly, because the excrements of dogs and wolves, in which the eggs occur, are not so much used as quack medicines as they were. Cobbold recommends male fern in doses of one fluidrachm as a remedy for *T. medio-canellata*.

Dr. Dunmire said he had successfully removed, about six years ago, by means of male fern, a tape-worm of variety unknown to him, but probably due to pork.

Dr. J. M. Barton referred to some cases of trichinosis which he had reported in the *College and Clinical Record*. The pork had been bought wholesale, and the family had lived almost exclusively upon it for a few days. From the date of the trichinæ being first introduced, undiluted glycerin, with abstinence from fluids both before and after the dose, had been freely used, and with decided benefit.

Dr. Tyson called attention to the different modes of origin of casts. The simplest and most natural idea is that they are fibrin: hence the process which produced them was promptly styled by the German pathologists a croupous inflammation. In acute Bright's disease the hyaline casts are probably true fibrin. In cases where no active inflammation exists, as in contracted kidney, hyaline casts are also present, but can hardly be considered true fibrin, and it is not impossible they may be coagulated albumen. In other

cases the dark granular and some waxy casts may result from a fusion of renal epithelial cells. One of the best-determined points with regard to casts is that the waxy cast occurs only in chronic renal disease.

He agreed with Dr. Richardson that casts are often overlooked in examinations, but was confident also that they might, at times, be absent in albuminous urine from Bright's disease, while, on the other hand, they are sometimes present in urine free from albumen. He referred to the case of a young girl who had died in uræmic convulsions from chronic parenchymatous nephritis whose urine was highly albuminous but contained very few casts, insomuch that several physicians had examined the urine without finding them. At the autopsy a typical large white kidney was found whose tubules were completely occluded with hyaline and waxy casts. He believed such occlusion might be an important factor in causing retention and hastening a fatal termination.

In illustration of the opposite condition, in which casts may be present in non-albuminous urine, he referred to a typical case of scarlet fever, with intense rash, in which he had at the acme of the latter examined the urine, and found it free from albumen, but containing numerous hyaline and granular casts. As the symptoms subsided the casts disappeared, but no albumen was ever present. The kidney was doubtless congested, but short of a degree sufficient to produce albuminuria. He advised examinations of urine to be made in scarlet-fever cases at the acme of the rash, as a knowledge of the condition of the kidney thus obtained would lead to the use of measures which might avert a greater degree of renal involvement. In this instance he immediately began the administration of digitalis.

With regard to the significance of casts, Dr. Tyson thought Charcot had either been erroneously reported in the book published as lectures by him on Bright's disease, or he was grossly in error in his views as to the significance of casts.

He thought much time was saved by using a low power as a finder in searching for casts. To do this satisfactorily, every microscope should be provided with a double nose-piece.

He doubted whether mucous casts came from the prostate: they were too long and bifurcated. They have no practical significance. For the preservation of casts in urine which was to be transported for some distance, he preferred salicylic acid, of which not more than a pinch should be added to four ounces of urine.

Dr. Formad said that he had observed hyaline casts to become granular after a few days; he had no doubt that in many cases in which granular casts had been reported they were simply hyaline casts which had undergone change through the deposition in them

\* See Stellwag, Augenheilkunde, S. 613, 626.

of collections of bacteria (*Micrococcus ureæ*), which are difficult to distinguish from granules of fat. Mucous casts come from the bladder and sometimes from the urethra or vagina, and may be artificially produced by adding saliva to urine.

Dr. Neff said that sometimes casts entangled crystals and looked like dark granular casts.

Dr. Richardson, in reply to a question, said that not only pus, but effused blood and change of blood-pressure in the kidneys, might make urine albuminous.

Dr. Henry inquired if the administration of alkali in phosphatic diathesis produced more deposit than could be ascribed to the direct action of the alkali itself.

Dr. J. C. Wilson asked if sodium urate might not show yellow stain.

Dr. O'Hara expressed his thanks for the labors of the committee and the gentlemen who had given these practical exhibitions of the usefulness of the microscope in clinical medicine. He could not see how a person in active practice could get along without using the microscope freely in examination of vomited matters; and in the diagnosis and treatment of kidney diseases which affected the general system, inducing anomalous symptoms and disturbances of other organs through the poisoned blood, it was often the only means of diagnosis and prognosis. Casts without albumen he found very common. They accompany poor health, dyspepsia, etc., and their value for diagnosis remains to be determined. He has been surprised to find how common casts are in modern life, very often accompanied with the uric acid diathesis and in some cases relieved by treatment. It requires, as Dr. Richardson says, much constant examination; but he feared few physicians in active practice could examine the urine daily while treating patients, for he found that frequently one specimen of urine would take him, to do full justice, a half-hour. It takes much time to examine under a high power, and in a doubtful case he would not rely upon the examination with low powers. He often found casts in cases and made no mention of it to the patients; one, a gentleman over eighty, who had almost perfect health for that age, and who had passed recently some large phosphatic calculi. In this case he considered there was some chronic catarrh of the tubuli uriniferi to explain the casts. He had an idea that lithæmia, as spoken of by Dr. Da Costa in the *American Journal of the Medical Sciences* for October, 1881, was often the forerunner of Bright's disease, and if early attention were given to diet, baths, avoidance of exposure to extreme climatic influences, etc., many of these insidious Bright's diseases might be detected and cured. Many of the symptoms narrated as caused by lithæmia were those of latent Bright's disease, according to his experience.

Dr. Tyson said that sodium urate might show yellow coloration, but is generally amorphous. In bulk it is well known to be red, while in the layers it would appear yellow.

In reference to the action of alkalies, he thought that the greater the alkalinity the greater the deposit of phosphates. In using benzoic acid he always gave it in compressed pills of five grains each, giving from three to five pills per day.

Dr. J. C. Wilson presented a specimen of malignant growth of the thyroid body. The patient, a woman, aged 80 years, was first seen on the 8th of December last. She had enlargement of thyroid, with difficulty in swallowing but not in respiration. The symptoms had existed about four months. The enlargement was smooth and symmetrical, three and a half inches in diameter. It grew rapidly, and the difficulty in swallowing increased. The tumor was elastic, and gave to the touch the impression of a tense cyst. After consultation with Dr. Cohen, the tumor was opened and a seton drawn through. The openings allowed the escape of a thin, clear fluid with white flakes. For ten days after insertion of the seton the tumor continued to discharge, but did not increase; after this time rapid increase began, and the patient died January 31. Examination showed it to be a rare affection, — a malignant tumor of the thyroid body.

Dr. Seiler said that the patient had applied at the dispensary of the University, and that he had suspected the malignant nature of the growth. He had never encountered a case of primary malignant growth of the thyroid in literature, but had presented a specimen of spindle-celled sarcoma of the gland several years ago to the Pathological Society of Philadelphia.

Dr. Cohen said that it was not possible to say positively that the tumor was primary in its malignant character.

Dr. Wilson said that no clinical evidence of malignant growth elsewhere had been discovered, although search had been made. He regretted that circumstances have rendered a complete post-mortem examination impracticable.

#### PATHOLOGICAL SOCIETY OF PHILADELPHIA.

THURSDAY EVENING, FEBRUARY 9, 1882.

The PRESIDENT, DR. S. W. GROSS, in the chair.

Case of *papilloma of the bladder*. Exhibited by Dr. H. F. FORMAD.

DR. FORMAD said that this case, while pursuing only the ordinary course of such a disease, and thus being presented without detailed history, was of great interest, since the diagnosis of its nature was made by the microscope. The sediment of the



urine when placed beneath the microscope showed many little tips of mucoid tissue, coated with a delicate cylindrical epithelium, which were evidently the terminal points of the dendritic growths.

Dr. TYSON said that he had now a case under observation of suspected papilloma of the bladder, where repeated microscopical examinations had failed to reveal anything characteristic, although the rational signs, such as hemorrhage, etc., clearly indicated some such neoplasm. He had made the diagnosis of papilloma of the rectum, however, by the microscopical examination of the dejecta.

Dr. HAZLEHURST recalled the account of a case published in the *Archives of Medicine*, where the microscope had determined the diagnosis.

Dr. NANCREDE made some remarks on the close resemblance, as far as microscopical appearances went, of the so-called adenoid and carcinomatous growths of the rectum, and pointed out that, as Dr. Van Buren has shown, the more sessile a growth is the more likely is it to prove malignant irrespective of its histological structure, and, *vice versa*, the same arrangement of cells, stroma, etc., in a markedly pedunculated growth clinically means benignity.

Dr. TYSON said that the history of this case, as well as others seen by him, proves most clearly what has been repeatedly adverted to in this Society, viz.,—that, howsoever malignant an internal growth may be, it does not produce *cachexia*, except when involving some one of the vital organs concerned in *nutrition*, unless, of course, inducing this condition by repeated hemorrhages or profuse discharges.

Dr. BARTON thought that if the urine were examined immediately after an attack of hemorrhage, fragments of the growth might more frequently be detected.

Dr. TYSON demurred to this, since the blood would necessarily interfere with the examination.

*Calcification of the bladder.* Exhibited by Dr. FORMAD.

Dr. FORMAD said that Dr. Dixon had asked him to present this specimen for him without history, since the condition was only accidentally found during the post-mortem examination of a man who died of phthisis. No bladder-symptoms had at any time been noticed, yet it seemed almost impossible that an organ with apparently a completely calcareously degenerated lining membrane could have performed its functions so well as not to have had any attention called to its functional insufficiency.

*Fatty heart from a case of progressive pernicious or idiopathic anemia.* By Dr. J. H. MUSSER.

As the notes of this case will be published elsewhere, with the Society's permission I shall only detail sufficient of them to show this to

be a true example of that most interesting disease.

Female, æt. 46, menopause six months previous to illness; gave birth to a six-months child twenty years ago; though twice married, never again became pregnant; failing in health and changing color past three years, but in bed only four weeks; entire length of time in bed, seven weeks.

She was under my care three weeks. The marked symptoms and features of the case were, briefly, as follows: Extreme anæmia; very little emaciation; earthy hue of skin; pallor of mucous membranes; irregular fever; acid perspirations; disturbed vision; subjective lights and noises; retinal hemorrhages; breathlessness; poor appetite; nausea and vomiting; constipation; slight enlargement of spleen; no enlarged glands; pulse rapid, small, and feeble; cardiac, arterial, and venous murmurs; no albuminuria; blood light-colored; corpuscles small, irregular; 715,000 red cells to a cubic millimetre, 15,000 white cells,—1 white to 47 red. Subsequently drowsiness and stupor set in, with delirium and coma, and death ensued.

Quantitative and qualitative analyses of the urine and blood were made, and will be published hereafter.

*Post-mortem*, twenty-four hours after death.—There were the usual appearances of the tissues, and I will only note, in addition to the appearances of the heart, that there were sub-peritoneal and pericardial ecchymoses; that the spleen was slightly enlarged, the liver fatty, the lymphatics normal, marrow of bone from radius and sternum healthy; brain not examined.

In pulmonary vein, black clot; in aorta and pulmonary artery, a soft yellow clot; in the cava, a soft red-brown clot, with black specks intermingled. The heart was pale, soft, flabby, and extremely fatty. The degeneration was more marked on the right side; along the septa and the vessels, in spots, there were areas of capillary injection. The right auricular wall was very thin, striæ of muscular fibres being replaced by fat, while other striæ seemed to be destroyed, so that parts of the wall were transparent, connective tissue forming the limiting membrane. The left side was similarly affected, but not in so intense a degree, there being only a diffuse yellowish discoloration. The papillary muscles of both cavities were markedly changed, the fatty change being shown by innumerable yellow dots. The right heart contained soft, semi-fluid, red-brown clots; the left, soft yellow clots. The aorta was a millimetre in width at the heart, and at the celiac axis admitted the little finger only.

I will report to the Society the results of a complete microscopical examination of all the organs.

Dr. FORMAD said that the microscopic examination of the bone-marrow revealed no

changes such as he had observed in other cases of pernicious anæmia.

Dr. TYSON referred to Dr. Pepper's first paper on this disease, which he there had termed myelogenic leukæmia, wherein he showed that this affection was always accompanied by medullary changes. In view of this fact, he was inclined to think that Dr. Musser's case should not be considered as a typical one of pernicious anæmia.

THURSDAY EVENING, FEBRUARY 23, 1882.

The PRESIDENT, DR. S. W. GROSS, in the chair.

*Rupture of fatty heart.* By Dr. J. M. BARTON.

I SAW Mr. H. for the first time on January 27. He complained of having had some pains in the stomach, but they had disappeared by the time of my arrival. Two days later he had a return of his pains; they were more severe than before, and were referred to the region of the diaphragm, with some shooting pains in the back. He was nauseated, and had vomited several times; his pulse was 148 to the minute, rather feeble, but regular and steady; it did not intermit, and its beats seemed to be all of equal force. The next morning he was much improved, the pain and other symptoms having been controlled by a small dose of morphia, and, with the exception of a pulse of 104, fuller and stronger than the night previous, he did not present an abnormal symptom. He had eaten a fair breakfast, and was enjoying a pipe and the morning paper at the time of my visit. During the next two days he had occasional slight pains of the same character, not sufficiently severe to interfere with his appetite or sleep. On the third day, after an unusually hearty breakfast and dinner, he died suddenly, without premonitory symptoms.

On post-mortem examination, the cavity of the pericardium contained about five ounces of clotted blood. A rupture of the left ventricle at the apex was found.

The walls of the ventricle were pale in color, very soft and friable, and much thinned at the apex. The cavity was filled with fluid and clotted blood; the track of the rupture was sinuous and dilated in portions of its course; there were blood-stains under the visceral layer of the pericardium, about one inch around the point of rupture.

Dr. NEFF said that he would like to know whether Dr. Barton had any reason to think that the rupture had occurred some time before death, and, if so, upon what he founded his opinion. He had made the post-mortem examination of a case in an old woman who had survived the rupture several days. The amount found in the pericardial sac had varied, in the cases examined by him, from a few drachms to a pint or more. From these facts he did not think that it was the amount of fluid

in the pericardial sac which caused death by interfering with the heart's action, since much larger quantities were often found in cases of pericarditis: where a large quantity of blood was effused, he was inclined to attribute death to cerebral anæmia; where a small quantity was at first poured out, the initial faintness was clearly due to shock, while if, later on, a large amount of blood found entrance into the pericardial sac, death then resulted from cerebral anæmia. All the cases examined by him showed what is usually found in the books,—viz., that the rupture was situated in the left ventricle, and usually at its middle and thickest part. A number of his cases had been produced by straining at stool.

Dr. BARTON thought that the pericardiac pain, which also extended to the back, and the rapid pulse were produced by the permanent effusion of a small quantity of blood, which afterwards became augmented. He would call Dr. Neff's attention to the fact that the fluid effused in pericarditis usually collected *slowly*, while the amount suddenly poured out in cardiac rupture was often large, when compression of the organ was inevitable.

Dr. NEFF thought that in such cases cerebral anæmia would occur before pressure could take place.

Dr. GROSS thought that the amount usually present, from six to sixteen ounces of blood, was not enough to induce cerebral anæmia.

Dr. F. P. HENRY thought that cerebral anæmia might well be excluded from the consideration of the causes of death in cases of rupture of the heart. No one cause was solely operative, three at least being concerned. These were—1, nervous shock, general and local; 2, interference with the heart's action from the presence of a foreign body suddenly introduced into the pericardial sac; and, 3, interference with the heart's action from division of its muscular layers. These three causes, he thought, were amply sufficient to account for death in such cases.

*Scirrhus carcinoma of mammary gland.* Exhibited by Dr. J. M. BARTON.

Mrs. C. L., æt. 50 years, is the mother of twelve children, the youngest now eight years old, and still occasionally menstruates. There has been no cancer in the family history as far back as the great-grandparents. One year ago the tumor appeared below and to the outside of the right nipple; it had not been preceded by any injury that the patient is aware of, though she had suffered at her first pregnancy, thirty years ago, with abscesses of both breasts. At the time of operation the breast was much larger than the normal one: the growth, surrounded by a large amount of adipose tissue, appeared the size of the adult fist, and was freely movable over the deeper structures.

The nipple was retracted, and numerous small points of dimpling were noticed in the skin, and were also found over the healthy

breast. The superficial veins, as well as the lymphatics, were enlarged. Eight or ten of the latter, each enlarged to the size of a crow-quill, radiated from the centre of the breast to its margin. The entire mammary gland, as well as a large portion of the surrounding tissue, I removed, at the German Hospital, on the 3d of the present month. The incision was carried into the axilla, and an enlarged lymphatic gland, not before discovered, was also removed.

*Cancerous degeneration of fibro-myomata of uterus, with metastatic growths in brain, etc.*

Exhibited by Dr. J. M. BARTON.

Mrs. R., æt. 42 years, mother of three children, the youngest now fifteen years of age, first noticed a tumor in the right iliac fossa ten years ago. In 1877, when she first came under my care, she had an enlarged abdomen, full of fluid. After tapping, on September 17, 1877, and drawing off thirty-four pints of straw-colored fluid, I found an irregular mass firmly bound in the right iliac fossa, reaching to the median line and as high as the umbilicus. It was connected with the uterus, into which I was able to pass a sound to the depth of five and one-half inches, and subsequently to the depth of nine and one-half inches. Before tapping, the intestines did not float upon the surface of the fluid, but were bound to the posterior wall of the abdomen, and could be felt as a doughy mass after the fluid was removed. The diagnosis was fibroid tumor of the uterus, while the fluid and position of the intestines were regarded as due to a coexisting chronic peritonitis. Each menstrual epoch was prolonged, and the blood lost was much in excess of the normal amount: on several occasions it was so profuse as to necessitate tamponing of the vagina. The fluid rapidly reaccumulated, and I again tapped her on January 12, April 12, July 17, and November 16, 1878, and on July 8, 1879, and again on January 15, 1882, removing each time, except the last, from twelve to eighteen quarts of fluid.

During 1878 several small cysts ruptured into the abdominal cavity. The patient, while attending to some domestic duties, would have severe pain in the abdomen, fainting, feeble, and rapid pulse, pallor of countenance, and other evidences of loss of blood. After remaining in bed for several days, her strength would return, and at the next tapping the fluid would be mixed with dark grumous blood.

While taking ergot steadily, the uterine tumor decreased in size, the hemorrhages ceased, the general health improved, and the fluid accumulated much less rapidly. After the tapping in 1879, she enjoyed good health, and was able to attend actively to her household duties, until the latter part of 1881, when she had an offensive discharge from the vagina, rapid pulse, loss of appetite, etc. She improved under treatment, but, as the dis-

tended abdomen interfered with respiration, I tapped her in January with a large aspirator needle, three and a half inches to the left of the umbilicus, drawing off only three quarts of dark, bloody fluid. It was then found that the solid growth had much increased, and was two inches greater in each diameter than ever before. Above the solid growth was a large, fluctuating, circumscribed mass.

About the first of the year three small, rapidly-growing, semi-solid tumors appeared, one on the forehead, one on the right forearm, and one on the left arm below the axilla.

About the 1st of February, though still quite strong enough to walk about the house, the patient's mind became suddenly affected; there were some delusions; her memory could not be relied on even regarding events occurring but a few minutes before. She would frequently fail to understand the simplest question, and would repeat her unmeaning reply again and again. On the 12th paralysis of the right arm occurred, on the 15th she became comatose, and on the 16th she died.

*Post-mortem.*—The uterine tumor, besides its normal attachments, had fastened itself to a small portion of the abdominal wall at the umbilicus, and to the omentum. The lymphatics of this portion of the omentum are filled with material resembling the metastatic growths. The posterior lobes of both the right and left halves of the cerebrum have in each a tumor the size of a walnut; the dura mater has also a deposit about an inch in diameter, opposite the middle of the sagittal suture. The skull was affected at the same point, a small nodule attracting attention while separating the scalp. The intestines were firmly bound to the posterior portion of the abdominal walls by old adhesions.

I here present the uterine tumor, the omentum with enlarged lymphatics, the two posterior lobes of the cerebrum, a portion of the dura mater, and one of the superficial tumors.

Dr. GROSS did not think it possible that a fibro-myoma could undergo carcinomatous degeneration, and would therefore refer the specimen to the Committee on Morbid Growths for a more exhaustive examination.

*The brain of a negro murderer.* Exhibited by Dr. CHARLES K. MILLS.

The brain exhibited was from a negro who had committed a murder nearly thirty years ago. He was tried, convicted, and sentenced to death, but the Governors of the State would not sign the warrant for his execution. He was pardoned about five years before his death, subsequent to the appearance of paralysis of the left side. He was a quarrelsome drinking man before the commission of the murder, and a fair representative of the criminal class. The paralysis of the left side of the face, and of the left arm and leg, gradually became more profound.

The right hemisphere of the cerebrum and the left hemisphere of the cerebellum were

markedly atrophied. The atrophy was most marked in the motor region of the convolutions, particularly in the ascending convolutions. A hard, brownish-black nodule was found isolated in the superior upper portion of the pons Varolii, to the right of the median line. Both cerebral hemispheres showed a decided excess of fissure and deficiency in gyrus development, with a tendency at numerous points to confluence of fissures. Some remarks were made on the physiological significance of atrophy of the *right* hemisphere of the cerebrum and the *left* hemisphere of the cerebellum, and also on the views of Benedikt that the brains of criminals are of the confluent fissure type. The brain was referred to the Committee on Morbid Growths for microscopical examination, and Dr. Mills expressed his intention of recording the case in detail at some future time.

Dr. F. P. HENRY referred to a case of bilateral atrophy of the superior and inferior parietal convolutions reported in the February number of the *Archives of Medicine* by Dr. J. C. Shaw. With the exception of being bilateral, the lesion closely resembled that of the specimen just exhibited. The case presented symptoms of mania, epileptiform convulsions, and slight paralysis, but its greatest interest consisted in the fact of its corroborating some recent experiments of Ferrier, made with a view to determine the situation of certain sensory centres, particularly those of vision and hearing. For full particulars Dr. Henry referred those interested in the subject to the article in the *Archives*.

*Femoral artery from a case of amputation at the hip-joint.* Exhibited by Dr. NANCREDE.

John A., æt. 21 years, a Swede, arrived in this port 4 A.M. February 22, 1882. While shifting the tow-rope, the rope slipped from the bitts, and, the tug steaming rapidly ahead, his left thigh was caught in the bight of a seven-inch hawser, which produced a compound comminuted fracture of the upper third of the thigh, with rupture of the inner coats of the superficial femoral artery. The left testicle had also been torn out of the scrotum, and had slipped up under the skin of the groin. My resident, Dr. Neilson, promptly etherized the patient, replaced the testicle, suturing the scrotum, and awaited my arrival. I saw him about 12.15 P.M., and found him in an astonishingly good condition, although suffering considerable pain. The limb was evidently hopelessly disorganized in its upper third, nothing but the skin apparently being left in front and on either side. A large part of this detached skin was already dry and horny, looking like that of a cadaver after the removal of the epithelium permits drying of the integument. The superficial femoral could be felt pulsating strongly to about the upper opening of the canal through the adductor magnus, when all trace of it was lost. The limb from this point down was cold

and tallowy-looking, with no trace of circulation in the popliteal or either tibial. Contusion extended up a little above Poupart's ligament in front, and over the back and outer part of the buttock.

Death being inevitable if left unrelieved in this condition, I first tied the femoral, and then, after applying an extemporized abdominal tourniquet, which was practically valueless, I rapidly disarticulated the limb, consuming probably not more than a minute in the operation. On account of the shortness of the fragment of the femur, its disarticulation took longer than usual. Owing to the promptness and efficiency of my friend Dr. Knight and my medical colleague Dr. Bennett, who happened to be present, and the skill of my resident, Dr. Neilson, aided by Dr. Watson, not more than five or six fluidounces of blood were lost. The patient bore the operation singularly well at first, but about half an hour after its completion he suddenly vomited profusely, the pulse ceased at the wrist, and it was only after two hours' work with whiskey, turpentine enemata, hypodermic ether injections, sinapisms over the heart, etc., that he reacted. This morning his condition was fair, with a warm skin, pulse about 120, with fair volume, skin-flaps sloughing in one or two places. He has vomited twice since the operation, but not for some hours. Part of the flaps apparently united; but little oozing.

#### PHILADELPHIA ACADEMY OF SURGERY.

MEETING OF APRIL 3, 1882.

The President, Dr. S. D. GROSS, in the chair.

PENETRATING DAGGER-WOUND OF THE SKULL  
—TREPHINING—RECOVERY, WITH HEMIPLEGIA.

THE following case, reported by Dr. Allis, occurred in the practice of Dr. W. P. Painter when residing in Yuma, Arizona:

A Chilean, 35 years of age, in an altercation, received a dagger-wound at a point in the left side of the head corresponding very nearly to the anterior inferior angle of the parietal bone. Dr. Painter was called to see him immediately, and, finding no injury and supposing him to be drunk, ordered him to be taken home. As he was being removed, symptoms of hemiplegia were noticed, and on more careful examination the wound was found, and a probe gently passed through it in the skull.

Dr. Painter would have trephined at once, as all the symptoms of compression were present; but a delay of ten hours was unavoidable. On removing the disk of bone that included the impression of the blade, an ounce or more of dark unclotted blood escaped, but from what precise point it was not ascertained. On recovering from the ether the right arm was noticed to move, and in a



week's time he was able to walk with a cane. He died three months afterwards from small-pox, but during the interim he showed gradual improvement, though at no time able to speak fluently, or to walk without a slight halt.

Dr. Hunt related a case that he had reported some years ago. A lad was injured by the prongs of a machine used in combing hemp. Three of the prongs penetrated deeply into the brain. At the same time there were lacerated wounds of the arm produced by the machine. Paralysis and tetanus existed simultaneously in the case, the former having a central and the latter a peripheral origin. The boy lived but a day or two after the appearance of the tetanus.

Dr. Brinton related a case which had recently been under his observation, in which, by a blow from a fly-wheel, an arched fracture of the frontal bone had been produced, which extended from one external angular process to the other. The lower portion of the bone had been forced backward, and was firmly held in that position by the overriding of the lower edge of the upper fragment. The unlocking of the fragments could be accomplished only after a free use of the saw along almost the entire line of fracture. The elevation of the bone was accompanied by a peculiar suction-sound, and was followed by a very rapid relief to the embarrassed pulse and respiration. The patient has since done well.

Dr. Brinton further related the case of a boy 8 or 9 years of age, whom he had treated some years since, and who had been kicked by a trooper's horse. There was much fracture and depression over the central portion of the occipital bone. On elevation of the fragments, great venous hemorrhage occurred, and on examination it was found that a spiculum of bone had been driven through the external wall of the lateral sinus. The external bony case was carefully picked away, so as to permit the edges of the rent in the walls of the sinus to be grasped by a delicate toothed forceps. A fine ligature was then applied laterally, and the bleeding was thus controlled. The wound was then closed, and the child made a rapid recovery, without further accident.

Dr. Barton stated that a man was brought to the German Hospital the third day after a penetrating wound of the skull. The wound had been inflicted with a pocket-knife, and the blade had entered the skull at least an inch. Up to the third day there were no symptoms to indicate so serious an injury, but subsequently those indicating inflammatory changes set in, to relieve which the trephine was employed, but death supervened.

Dr. Agnew presented a case of cicatricial deformity from a deep burn in a colored boy 19 years of age. Seven years before, he had burned himself about the wrist, and the resulting cicatrix had firmly bound his entire left thumb to the wrist in such a manner that

the thumb crossed the wrist obliquely, the end of the thumb lying on the ulnar side of the wrist and about three inches above it. Having first freed the thumb from its attachments, and having elevated it to its normal position, the wrist was carried to the side of the body, where a flap five inches in length and four inches in breadth was raised from the abdomen, of sufficient size to cover the denuded wrist. At the end of three weeks the connection was severed. The graft upon the wrist was almost entirely united at the time the patient was exhibited, but the sensation in it was still very imperfect.

Dr. Agnew presented a lad 18 years of age, upon whom he had operated for exstrophy of the bladder. By means of two lateral inguinal flaps turned upward and inward, and a central abdominal flap turned downward, the abdominal deficiency had been in a great measure supplied, and the dribbling of urine limited to the region of the normal outlet. He remarked, also, that the groove on the dorsum of the penis acted as a channel to the urine, serving to conduct it to an artificial receptacle.

The Chair, having stated that Dr. Joseph Pancoast was the first to ameliorate by a surgical operation the disgusting accompaniments of this malady, called upon his son to open the discussion.

Dr. Pancoast stated that it had always been a great desideratum to establish an independent outlet for the urine and subsequently to cover in the entire anterior wall of the bladder. With this in view, and acting upon the suggestion of Dr. Levis, he had passed a needle into the rectum, and had left a ligature at the point where he wished to establish a fistule. There were no subsequent untoward symptoms, but the lad, just as he was ready for the plastic operation, ran away, and he lost sight of him.

Dr. John B. Roberts stated that he had assisted Dr. Levis, and that his plan was to establish a perineal urethra before attempting the plastic operation. This he did by carrying a needle from the *bas-fond* of the bladder to a desirable point in the perineum and inserting a gum bougie. This was from time to time removed and a larger one inserted. As soon as the perineal urethra was sufficiently formed, the plastic operation was performed. This consisted in forming a scrotal flap and in turning the rudimentary penis into and in making a complete anterior wall to the bladder.

Both cases died *after* the plastic operation, with symptoms of septicæmia, but in neither were there any contra-indications to the preliminary operation.

Dr. S. W. Gross asked Dr. Roberts what the advantages of the preliminary operation of Dr. Levis were over those operated upon as in the case just exhibited. He (Dr. Gross) could see advantages that might accrue from establishing a vesico-rectal fistule and converting the rectum into a temporary receptacle

for the urine; but these were not apparent in the operation described by Dr. Roberts.

Dr. Roberts replied (1) that it prevented infiltration of urine between the flaps of the subsequent plastic operation; (2) that it was better designed for the application of a receptacle to catch the urine; (3) that it allowed the flap taken from the scrotum to be made without perforation for the escape of urine.

#### AMPUTATION AT THE KNEE-JOINT AND AT THE KNEE.

In bringing this subject before the Academy for discussion, Dr. Brinton first alluded to the history of amputation at the knee-joint. The operation is by no means a novel one, for it is described as having been performed in some sort two hundred years ago. It fell, however, into disuse, and was not revived until the time of Velpeau, who in 1829 published the records of fourteen cases, with thirteen cures. In 1832 the same writer, in his treatise on operative surgery, stated that he feared he might have exaggerated the safety of the operation, but that it remained proved that the objections which had been made against it have no solid foundation. The first amputation at the knee-joint performed in America was made successfully by Dr. Nathan Smith, of Connecticut, in April, 1824, for long-standing disease of the bones and soft parts of the leg. In 1841 the operation was successfully performed by Dr. Pancoast, of Philadelphia. In 1852 Dr. Stephen Smith, of New York, published in the *New York Journal of Medicine* an excellent article on the subject, and in January, 1856, Dr. Markoe published in the same journal his admirable paper on amputation of the knee-joint, and in the November number of the same journal an article entitled "Syme's Amputation through the Knee in Chronic Disease of the Joint." In May, 1845, Mr. Syme published in the *London and Edinburgh Monthly Journal of the Medical Sciences* an article upon amputation of the knee. In 1864 Mr. Carden, of Worcester, published in the *British Medical Journal* a paper on amputation at the knee as practised by him since 1846. In March, 1868, Dr. Markoe published in the *New York Medical Journal* an elaborate essay on amputation at the knee-joint, and in April, 1868, the speaker presented in the *American Journal of the Medical Sciences* an extended paper on the same subject, embodying the reports and results of one hundred and sixty-four cases of this operation at the hands of American and European surgeons. A most excellent and comprehensive essay on the same subject was read by Mr. George Pollock, F.R.C.S., Surgeon to St. George's Hospital, before the Medico-Chirurgical Society of London, December 14, 1869, and was printed in the volume of their Transactions for 1870.

The speaker then alluded to the different varieties of amputation at the knee-joint and

the knee: first, those of the knee-joint proper, pure disarticulation, in which the cartilages covering the condyles were undisturbed; secondly, those in which the cartilages were removed; thirdly, those in which the condyles in part, one or both, were sawn off; and, fourthly, where the amputation was performed above the joint and below the diaphyso-epiphyseal line, more or less according to the method of Syme and Carden. By the former the flap was made from the calf-muscles; by the latter, from the integuments in front of the joint. By both the patella was taken away. Neither of these operations could be looked upon as amputations at the knee-joint; strictly speaking, they are amputations of the knee, and by the removal of the patella and the comparatively high division of the bone new factors, influencing the dangers and success of the operation, are introduced.

Dr. Brinton then stated that in endeavoring to arrive at the true value of knee-joint amputation several points are to be considered: first, what is the mortality-rate of the operation, and how does this rate compare with the rates of thigh- and leg-amputations? secondly, to what cases is knee-joint amputation applicable? thirdly, what are the dangers of the operation, and how can they be avoided? fourthly, what is the nature of the resulting stump? and, fifthly, what mode of operation promises best?

As to the rate of mortality, the speaker stated that in April, 1868, he had collected and published one hundred and seventeen cases of knee-joint amputations practised by American surgeons. The death-rates were, for primary amputations after accident, forty-four per cent.; secondary after accident, forty-two per cent.; secondary for disease, less than seventeen per cent.,—in the one hundred and seventeen cases an average mortality of about thirty-four per cent. In one hundred and sixty-four cases, the aggregate of American and European operations, collected and published at the same time, the death-rate after primary amputation for accident was 42.37 per cent.; secondary after accident, 37.83 per cent.; secondary after disease, 22.58 per cent.,—a general mortality-rate of 32.31 per cent.

Mr. George Pollock, in his paper on amputation at the knee-joint, already referred to, reports forty-eight British cases of the operation, of which thirteen were fatal and thirty-five recovered; and in his tabulations he places with these forty-five American cases reported by the speaker, of which thirteen died and thirty-two recovered,—thus making a total of ninety-three cases in which full histories are on file, showing a death-rate of 27.97. Mr. James Lane, in his table published in Cooper's Surgical Dictionary, presents sixty cases of knee-joint amputation, with a death-rate of 35.

Regarding the mass of the figures thus pre-

sented to the Academy, and which are probably practically correct, it would seem as if the average death-rate of amputation at the knee-joint, under favorable circumstances, is somewhere in the neighborhood of from thirty to thirty-two per cent. It will be seen that this percentage of death is much below that of amputation in the continuity of the thigh, and probably does not exceed, if indeed it equals, the death-rate of amputation performed through the upper third of the leg in the neighborhood of the knee-joint.

The second question is, to what class of cases and when is amputation at the knee-joint applicable? In a general sense, the answer can be thus given: to very many cases of injury or disease in which hitherto amputation of the thigh in its lower or middle third has been practised. In this category would be included—1, crushed, compound, or gunshot fractures of the leg bones, extending up to or involving the knee-joint; 2, gunshot wounds of the knee-joint; 3, gangrene of the leg, the result of injury to the great vessels or nerves; 4, chronic or irreparable diseases of the bones, or tumors of the leg; 5, degeneration of the knee-joint.

The third question is as to the *dangers of the operation at the knee-joint*. This is in part answered by the statistics. Disarticulation at the knee may be justly assumed to be a far less dangerous operation than thigh amputation, no matter how far down the latter may be made. In all amputations there is shock, but in the disarticulation in question this is diminished in great degree,—why, it may be difficult to explain. It may be due to the slight muscular section, or to the preservation of the continuity of the shaft and medullary cavity of the femur, or to both; but the fact of this diminished shock remains. Then, too, there is less likelihood of pyæmic poisoning, since the cancellated and medullary structures are spared, and as a consequence there is a lessened chance of the development of osteo-myelitis, so deadly in its influences. Synovial inflammation was at one time a phantom fear of surgeons after this operation; but it is in truth but a phantom, for why should synovitis be feared when the joint ceases to be a closed cavity, when the operation destroys the articulation, and when in a few hours every trace of synovial structure disappears? There is, however, one source of danger which should be noted as occurring after amputation at the knee-joint: this is inflammation of the sheaths of the thigh tendons, especially of that of the biceps, and the inflammation of the bursa over the patella. These conditions occur between the second and fifth day, and are sometimes so severe as to threaten the patient's life. The swelling of the stump is marked by great tenderness, pain on pressure, arrest of discharges, and considerable constitutional disturbance. The treatment should be early and

free evacuation of the abscesses and proper constitutional support.

Fourthly, the *character of the stump* after amputation of the knee-joint. This is usually a good one, especially if the flap be obtained from the front of the knee, if the patella be left, and if the round tendon of the adductor magnus be preserved. If this be done, it will be found that the stump will possess much power of rotary motion, and will in every respect be a useful stump in after-life.

Fifthly, as to the character of the operation itself. In many cases, of course, the nature of the lesion influences the character of the stump-coverings; but, where the surgeon is permitted the election, it would seem as if the best results are obtained by forming a long anterior integumental flap, by the preservation of the patella, and by leaving the condyles intact.

Where, from the nature of the case, there must be some insufficiency of flap-coverings, Dr. Brinton stated that the projections of the condyles might be carefully sawn off, but that probably the best results were obtained where they were left, and in this opinion Mr. Pollock, of St. George's Hospital, concurs. Where the cartilage covering the condyles is left, it disappears in one of two ways. Sometimes it softens, becomes thinner, and disappears molecularly, the vessels on the end of the bone beneath the softening cartilage gradually becoming more distinct, and serving as the support for granulations of rapid growth, which spring from the bone to coalesce with other growths from the soft tissues of the intercondyloid notch. In other cases the articular cartilage, if exposed, softens, becomes sodden, and between the fifteenth and twentieth day separates in layers from the bone, and may be drawn away by the forceps. Granulation, as already alluded to, then takes place. The cicatrix, after operation by the long anterior integumental flap, is usually drawn up on the posterior portion of the stump, and is not exposed to any pressure in the after-adjustment of an artificial limb. Lateral flaps afford good covering for the condyles and favor drainage, but the cicatrix is apt to fall on a line of future pressure. Whatever operation may be done, full and complete drainage must be vigorously established.

In closing his remarks, Dr. Brinton pointed out the propriety of dividing the popliteal artery on a line with the articulation, cutting it off, in fact, short, and, if possible, above the point of origin of the azygos and inferior articular arteries, which are distributed to the soft tissues of the interior of the joint. He stated that one of the most annoying features in knee-joint amputation is the occasional secondary oozing from the vessels distributed to the intercondyloid tissues. Minute at the time of operation, these vessels often enlarge afterwards, and give rise to obstinate secondary bleedings. The heads of the gastrocnemius

should be removed: they fit awkwardly upon the stump and give rise to suppuration. The popliteal vein, the speaker stated, should always be tied. Experience has shown that this vein is peculiarly apt to gape and bleed, —whether from the firmness of the tissues by which it is surrounded, its numerous branches, or, as has been suggested by Mr. Carden, the jar of the popliteal pulsation, cannot be determined. As a clinical fact, ligation prevents all bleeding, and, to the speaker's knowledge, had never given rise to any untoward results.

Dr. Pancoast said that he had operated twice, in each case forming three flaps. In each the posterior junction of flaps gave a capital outlet for pus. In the second case this mode was compulsory, as amputation was required on account of a tumor. The flaps fell, and the joint was exposed. An instructive point was that the cartilages did not inflame, but seemed to melt or dissolve away as if from maceration. He had scraped them away, and not a tinge of blood followed until the proximity of the bone was reached.

Dr. Hewson preferred Teale's anterior-flap operation. His guide in its length was half the circumference of the limb at the point of amputation. The posterior flap was proportionately short, being one-quarter the long flap. Dr. Hewson's plan was to saw off the condyles, taking care never to go above the line of the epicondyles, and always to remove more from the inner than from the outer condyle; then, denuding the patella and intratrochlear surfaces of their cartilages, and arresting hemorrhage by torsion, he adjusted the flaps by a gauze and collodion dressing, and completed the whole by the application of earth. His results had been uniformly successful and yielded a good and serviceable stump. During the process of healing, he had kept the thigh flexed, and so readily secured the fixing of the patella in the intratrochlear space and got its firm union there to the os femoris.

Dr. Hunt said that in his experience as to knee-joint operations the great thing to be avoided is retraction of the flaps and projection of the condyles. He had seen this occur frequently after the greatest care to prevent it had been taken. The same thing occurs in other amputations, but the mass of bone to deal with when things go wrong is much greater and requires more radical procedure in the secondary operations.

In regard to fixing the patella, the Chair stated that he would, if necessary, unhesitatingly pin the patella to the intercondyloid space. This could be easily done by means of a nickel-plated steel screw, the size of an ordinary gimlet, and such a procedure would prevent all possibility of upward displacement of the bone by the action of the extensor muscles.

Dr. Agnew said that if a single anatomical point in the amputation were borne in mind, the whole difficulty of uncovering and expo-

sure of the condyles would be obviated. In making the anterior flap the incision should never be carried above the line of the articulation. If this rule is borne in mind, and the anterior flap carried to one inch below the tubercle of the tibia, there will be no undue traction upon the flap. He was an advocate of the operation through the articulation, and thought it possessed advantages over all other operations in that region.

OSCAR H. ALLIS, M.D.,  
Recorder.

#### NEW YORK ACADEMY OF MEDICINE.

A SPECIAL meeting was held, May 4, 1882, Dr. FORDYCE BARKER, President, in the chair.

The statistic secretary made an informal report on the death of James R. Wood, M.D., which took place on the morning of May 4, of double pneumonia.

Dr. ADAMS read a memoir on the late Dr. Pond, who died in his ninety-first year, and who for twenty-nine years was treasurer of the Academy of Medicine.

#### ADJOURNED DISCUSSION OF BRIGHT'S DISEASE, SUGGESTED BY THE PAPER OF DR. M'BRIDE.

The discussion was opened by a paper read by Dr. WILLIAM H. DRAPER. The author spoke of the fact as being remarkable that all the affections of the kidney which are now known and bear the name of Bright were recognized by that eminent physician, and his views concerning their etiology and the pathological changes, though differing in some respects from the views entertained by some at present, showed that little or nothing had since been discovered concerning these affections of which he had not, as it were, a foresight. The form of Bright's disease to which Dr. McBride had alluded in his paper doubtless was the large granular kidney, which began so insidiously that never at first were there symptoms which prominently directed the attention to this organ. He was not prepared to say that the so-called parenchymatous forms of renal disease never occurred insidiously, but he was strongly inclined to believe that the cases which seemed to justify this statement were cases of diffuse nephritis in which the granular or interstitial disease was the antecedent condition. Whatever might be the explanation of the mixed forms, it seemed there could be no doubt of the essential element of the granular kidney, or of the fact that this form of disease may pursue an insidious course through many years before manifesting itself by symptoms peculiar to renal disease. Before entering upon the consideration of the early diagnosis of this form of renal disease, he would say a few words with regard to its etiology.

One of the most important factors in the etiology was heredity, as admitted by most



authorities on renal pathology at present. In estimating the influence of heredity, he thought we should take into consideration those vascular forms of disease which were so often associated with granular kidney, though in given instances the lesion of this organ may not have been recognized.

The second factor in the etiology was the existence of the gouty habit, whether inherited or acquired. This relation was generally admitted by the profession, and any difference of opinion concerning it was to be accounted for chiefly by the limited definition which pathological anatomists gave the term gout, it representing to them a specific form of articular disease, while to the clinical observer the gouty habit was seen to produce such correlated phenomena as certain irritations of the nervous system, catarrhal affections of the mucous membrane, exanthematous diseases of the skin, acute and subacute inflammations of synovial membranes, affections of the vascular structure, etc. This, he said, might seem to be making of gout a universal disease, and so he believed it to be, for the reason that it recognized, in certain errors of nutrition, a universal cause.

Another circumstance in the history of granular kidney was senility. It was a disease of advanced, or, more properly speaking, declining years. It was exceedingly rare under twenty, the largest number of cases occurring between fifty and sixty. But the period of senility was not an arbitrary one, measured by years, but rather by recognized signs of degenerations peculiar to old age.

The above facts in the etiology seemed to go to prove that the granular kidney was only a part of a general atrophic process induced either by the limits fixed by heredity, or by the wear and tear of life; that the disease was a general, not a local one. Speaking more in detail of the cardiac and vascular changes, he quoted from Dr. Bright, and remarked that a more rational idea concerning them in most respects could not be offered today. The theory that there was a functional stage of the granular kidney which preceded, perhaps for many years, any permanent lesion, was believed in by many observers.

In directing attention to the early diagnosis of granular kidney, the chief facts to be considered related to the causes concerned in its production. The ordinary symptoms and signs of renal disease were for the most part indicative of pronounced and probably irretrievable disease. He referred briefly to the significance or lack of significance, in the early diagnosis, of the presence of albumen in the urine, high pulse-tension, and high specific gravity of the urine. He had often found the latter to precede many cases of inflammatory disease. To repeat, the question of early diagnosis depended upon the etiological factors already mentioned,—that of heredity (which was as well established as in phthisis),

the gouty habit, etc.,—and the management of individual cases should be directed accordingly.

#### DISCUSSION.

Before calling upon members to discuss the subject, the President remarked that he would be pleased to hear more regarding the therapeutics of this affection, both from Dr. Draper and others. With relation to the condition of the heart, he would like their experience as to the indications or the contra-indications for the use of digitalis. In the albuminuria associated with certain acute diseases he had found digitalis to be one of the most valuable cardiac tonics in restoring the function of the kidneys in the elimination of urea; but there was a class of chronic cases in which, it seemed to him, digitalis was specially contra-indicated.

Dr. A. H. SMITH quoted Fothergill, who, he believed, regarded the action of digitalis as a diuretic as due chiefly to increase of the arterial tension. Dr. Smith was very much gratified with the results of the milk diet in the treatment of this class of cases. He also regarded the inhalation of as much oxygen as possible, by being in the open air, as important: whether the inhalation of pure oxygen would answer the same purpose, he could not say. He asked whether fox-hunters, and those much on horseback and out of doors, in England, and who suffered from the gouty habit, were as likely to be troubled with this form of renal disease as those of their countrymen of the gouty habit but of a sedentary disposition.

Dr. VANDERPOEL thought he need not seek further for an explanation of the appearance of albumen in the urine than that based on low blood-tension,—venous stasis. The theories, however, of the lithæmic diathesis and vaso-motor disturbance were suggestive. He considered the term "granular kidney" a misnomer. This lesion occurred only in the progress of a general disease or diathesis, and was not primary. Doubtless the cardiac trouble found in these cases occurred quite as soon as the kidney affection. High pulse-tension probably would not be appreciated before the disease had become established. Indeed, it came on so insidiously that the physician was not consulted before permanent lesions had occurred. High livers, those addicted to alcoholic stimulants, and those of sedentary habits were most likely to be the victims. Digitalis was only a valuable adjunct in the treatment in the later stages of the affection, when dilatation of the heart had taken the place of hypertrophy.

Dr. KINNICUTT thought the presence of hyaline casts, especially when associated with increased arterial tension, should be regarded as an important sign in the recognition of the early stage of granular kidney, possibly of the stage which had received the

name functional. These casts were present in many cases of lithæmia. Polyuria was also an early and a valuable symptom, and particular care should be taken to measure all the urine passed during several days. He referred to his explanation of the appearance of albumen in the urine as given in a paper read before the Academy.

Dr. BURRALL believed, from notes of cases in his practice, that albuminuria was by no means a frequent concomitant of lithæmia.

Dr. T. A. MCBRIDE said it seemed to him the point of greatest importance in this discussion was with regard to whether we could establish a stage preceding the occurrence of chronic Bright's disease which was characterized by a sufficient number of symptoms to permit of its appreciation. At present our diagnosis of chronic Bright's disease was based mainly upon the low specific gravity of the urine, the quantity of the urine, and the presence of certain casts. If it could be said that there was present before this stage a set of symptoms constantly observed, perhaps existing for years before the symptoms indicating the closing years of the disease made their appearance, we had taken a step greatly in advance. Those about to enter upon some important undertaking would then first consult the physician to know whether they were in a condition likely to terminate fatally, or at least in a form of disease likely to cover an indefinite period. If we were in a condition at present to determine this introductory stage of the disease, by examining the urine, the pulse with regard to high blood-tension, the state of the heart, etc., it still required the greatest amount of skill and experience to determine whether or not these conditions were present in a given case. With regard to treatment, he said it was to Dr. Draper that we owed in this country the most intelligent and successful rules of diet for patients in a condition of suboxidation, and he would be glad to hear from him on that subject.

In closing the discussion, Dr. DRAPER said he would not have time this evening to give his ideas as to the dietetic treatment of gout. He would say, however, that they were not original; that they were suggested by reading a most remarkable and valuable book on pathology and therapeutics, by Dr. Bence Jones, many years ago. It was devoted to the subject of what he called diseases of suboxidation, and was an application, so to speak, of Liebig's views on gout and its allied disorders. The book took a somewhat strictly chemical view of disease, and was severely criticised, and is also at the present day, but is gaining ground. It illustrated the fact that the laws of vital chemistry were very analogous to those of inorganic chemistry. He could not answer Dr. Smith's question with regard to whether the gouty kidney was more common among gouty persons who lived a sedentary life than among gouty per-

sons who lived an active life. His own belief was that there were a great many gouty lesions, and that the vulnerability of different organs determined in a very large degree the point upon which the gouty tendency made its inroads. In some persons the joints were the vulnerable point, in others the mucous membrane, and in still others perhaps the arteries, etc. He would not use digitalis except in the latter stage, unless the case were complicated by lesion of the mitral valve. He preferred, however, morphine to digitalis as a cardiac stimulant in the latter stages of the disease. No remedy equalled morphine for the relief of the dyspnœa of granular kidney,—a dyspnœa the cause of which we as yet knew not.

The Academy adjourned.

### GLEANINGS FROM EXCHANGES.

EXCISION OF CANCEROUS PYLORUS IN ENGLAND.—On April 5, at the Manchester Royal Infirmary, Mr. F. A. Southam removed the pylorus, along with nearly a third of the stomach, from a man aged 43, suffering from carcinoma of the parts which were taken away by operation. The patient had been under the care of Dr. James Ross for the relief of symptoms of pyloric obstruction. A hard and freely-movable mass could be felt through the abdominal walls; and operative measures were determined upon at Dr. Ross's suggestion. The operation was performed by Mr. Southam, with the assistance of Mr. Whitehead, antiseptically, after the method adopted by Professor Billroth. Thirty-nine silk ligatures were found necessary for uniting the duodenum to the stomach. The shock succeeding the operation, which lasted one hour and a half, appeared to be very slight, and for twelve hours the patient's condition was all that could be desired. No sickness ensued; the pulse was very fair; and the temperature did not fall below 97.6°. Towards evening the temperature rose gradually; and, fourteen hours after the conclusion of the operation, death occurred somewhat suddenly, apparently from collapse, but in reality, in the opinion of the operator, "as the result of that acute form of septicæmia, or rather septic intoxication, to which Dr. Marion Sims has directed attention, and which is, no doubt, the real cause of death in many cases of abdominal surgery, especially where no outlet is afforded for the discharges." The temperature just before death had risen to 102°. At the necropsy, the condition of the parts around the seat of operation was carefully examined, and tolerably firm adhesion was found to have already taken place between the cut surfaces of the stomach and the duodenum. There were six and a half ounces of blood-stained serum in the peritoneal cavity.—*British Medical Journal*, April 15.

**ACONITE AND ACONITIA.**—Dr. Wm. Murrell (in the *British Medical Journal* for April 15, 1882) calls attention to the great number of commercial forms of aconitia now in the hands of druggists. As usually supplied, at least, aconitia is not a simple substance, but a mixture of several alkaloids. English aconitia is said to be seventeen times as active as the German. According to Plügge, seven kinds of commercial aconitia with which he had experimented might be arranged in the following order of decreasing activity: 1, Petit; 2, Morson; 3, Hottot; 4, Hopkin and Williams; 5, Merck; 6, Schuchart; 7, Friedländer. This list is incomplete, as it does not contain Duquesnel's crystallized aconitia, which has been regarded as more active than any of the amorphous varieties. This should lead to caution in prescribing and dispensing aconitia, in order that no misunderstanding may arise or substitution occur.

### MISCELLANY.

"It appears to be evident that the high-potency party have held sway too long. They represent a form of medical spiritualism which is unsound in theory and very prejudicial to the interests of true homœopathy. Notwithstanding this, they are holding prominent positions in all our medical colleges and societies, and at the same time are endorsing and advocating extravagant theories which are evidently subversive of the fundamental principles of homœopathy. They have held these positions so long that they have evidently come to the belief that they alone represent homœopathy, hence by right are privileged to dictate to the low-potency party regarding all matters involving homœopathic interests. They appear to be oblivious of, or at least ignore, the fact that this nondescript method of practice is repudiated by many of the best and wisest men in our school. They do not yet appear to comprehend the fact that the recognition and advocacy of the false theory of dynamization *must cease*, because it is the embodiment of error, and, from the homœopathic point of view, of error only."—*New York Medical Times (Homœopathic)*.

In such round terms the simple-hearted and primitive disciples of Hahnemann are berated by their more progressive brethren of the same school. They deny flatly the doctrines of their fathers, and call them "nondescript," "false," etc. Does not this look a little like persecution? and will it not be well, now that we are acting in the character of peace-makers, for the State Medical Society to attempt to bring about a reconciliation between these opposing schools, the death of both of which we have of late piously compassed? We have taken them both to our bosom; and if, instead of nestling there until they are quietly suffocated, they fall to fighting, is there not danger that they will

thrive by their dissensions and become more muscular and venomous? It may be a question to whom the trade-mark "homœopathist" belongs, if indeed it belongs to either; but so long as we are holding them in our affectionate embrace we must not allow them to frustrate our pious intentions by contending with each other, which, according to our State Medical Society, is the food of martyrs.—*New York Medical Gazette*.

**RESIGNATION OF THE POST-GRADUATE FACULTY OF THE UNIVERSITY OF NEW YORK.**—Owing to unfair treatment and a general want of appreciation by the regular Faculty and Board of Trustees, Drs. D. B. St. John Roosa (Professor of Ophthalmology), William A. Hammond (Diseases of Mind and Nervous System), Stephen Smith (Orthopædic Surgery), J. W. S. Gouley (Diseases of Genito-Urinary Organs), Montrose A. Pallen (Gynecology), H. G. Piffard (Dermatology), James L. Little (Clinical Professor of Surgery), and F. R. Sturgis (Clinical Professor of Venereal Diseases), have resigned from the Post-Graduate Faculty of the Medical Department of the University of the City of New York. Dr. A. E. Macdonald, Professor of Medical Jurisprudence, is the only one remaining of the Post-Graduate Faculty, and will probably retain his connection with the University.

It is said that this action foreshadows the institution of a new college in New York especially devoted to post-graduate instruction.

**DIPHTHERIA IN CALVES COMMUNICATED TO PIGS.**—Mr. Cole, a veterinary surgeon of Hinckley, in Australia, has published the following illustration of the way in which diphtheria may be communicated from one of the domestic animals to another of a different species, thus indicating special sources from which the human disease may at times be contracted.

A calf, about five months old, was found to be dying with some symptoms of a throat disorder, and instructions were given to have the body buried, which through some neglect was not done immediately, so that a sow which managed to get access to the enclosure attacked the diseased meat and ate some of it. This circumstance came to be known when, a few days later, some of the pigs were taken down with throat disease. Eventually the sow and her young pigs were also victims. The latter died within twenty-four hours, while the others, including a boar, recovered entirely. Apropos of this outbreak among domestic animals, an account is given of an epidemic that occurred in the Oakleigh police station, the disease being, on this occasion, traced to a diseased cow, whose milk had been used by the inmates of the station.—*New York Medical Record*; from *Australian Veterinary Journal*, February, 1882.

**OPENING OF A NEW HOSPITAL AT ASHLAND.**—By act of Assembly, approved June 11, 1879, authority was conferred for the

erection of a Miners' Hospital in the coal regions of Pennsylvania, at Ashland. The building having been completed, it was formally transferred to the trustees by Governor Hoyt, with appropriate ceremonies, on the 21st of April, 1882. The hospital is in the shape of a Roman cross, the central portion being two stories high and having a front of eighty-seven feet. This portion of the building is surmounted by a spire one hundred and seven feet high. One-story wings on each side extend one hundred and forty-two feet: they are forty-two feet wide. There is a basement, permitting a continuous passage below the wards and centre building. Great attention has been paid to ventilation and to efficiency of administration. Dr. George Yeoman has been appointed resident physician.

IN a recent article in the London *Lancet* Dr. Stephen Mackenzie endorses the treatment of chronic dysentery by means of voluminous injections of one-half a drachm to a drachm of nitrate of silver, as originated by Dr. H. C. Wood.

THE fourteen Jewish pharmacists in St. Petersburg, and all Jewish pharmaceutical assistants, have been notified by the Minister of the Interior that they will no longer be allowed to follow their calling, and must within a year dispose of their business to some one not Jewish.

**OIL OF TURPENTINE AS A DISINFECTANT.**—Turpentine water (made by shaking up water with old oil of turpentine), on account of its ozonizing properties, is considered as a valuable disinfectant and antiseptic. This was pointed out by Schönbein, in 1858, who demonstrated that the water thus prepared contained peroxide of hydrogen. Radunowitsch, in a communication to the Russian Chemical Society, in 1873, reported a number of experiments made by him, and recommended this solution for use in hospitals, especially for gangrenous wounds.—*Scientific American*, April 8.

## NOTES AND QUERIES.

THE Secretary of the Surgical Section of the American Medical Association has the following progress to report in regard to papers for the next meeting: Prof. A. C. Post, "Lupus Exedens of Face;" Dr. J. R. Weist, "Elastic Tension in the Management of Cases of Delayed Separation of Ligature;" Dr. Henry A. Martin, "Advances in Conservative Surgery of the Joints;" Dr. Carl Seiler, "Some Remarks upon Electricity in Surgery;" Dr. W. M. Fuqua, "Subperitoneal Surgery;" Dr. A. Van Derveer, "Cleft of Hard Palate;" Dr. Oscar J. Corkery, "Modification of Plaster Splint;" Dr. C. W. Nesbitt, "Ununited Fracture of Femur treated by Exercise;" Dr. John E. Link, "Alcohol as an Anesthetic;" Dr. William Hill, "Laparotomy;" Dr. Ephraim Cutter, "Bi-Fracture of Patella—Partial Bony Union after Eight Years;" Dr. William Stewart, "Fracture of Elbow-Joint." Drs. J. W. Dora, J. H. Warren, Henry O. Marcy, Edward Borck, and B. H. Riggs promise papers; titles not received. The Secretary, owing to the death of the chairman, will read a paper on "Excision of Portions of the Alimentary Canal covered with Peritoneum," as the address on Surgery. Gentlemen wishing to read papers will please notify the Secretary of the Section, William A. Byrd, M.D., 407 Jersey Street, Quincy, Illinois.

## DR. BOENNING'S CASE OF "PRURIGO."

EDITOR PHILADELPHIA MEDICAL TIMES:

SIR,—Dr. Boenning can hardly ask us to accept his case reported in the *Times* of May 6 as one of prurigo, without more convincing evidence than he has as yet offered.

In the first place, prurigo is so rare a disease in this country that out of more than sixty thousand cases of skin disease reported by competent dermatologists—almost all graduates of the Vienna school, and therefore familiar with the affection as it occurs abroad—but two cases of prurigo have been placed upon record.

Secondly, the appearances as described by Dr. Boenning are precisely such as are found in chronic papular eczema, one of the commonest skin diseases, and a thousand times more likely to be met with than prurigo. (I am surprised, by the by, that, while excluding pedic-losis and pruritus, Dr. Boenning did not give his reasons for excluding papular eczema.)

Thirdly, the rapidity and completeness of the cure are contrary to what we know of the character of prurigo. Hebra says flatly, "it is incurable."

I may add that I had under my care at the Dispensary for Skin Diseases, in the autumn of 1877, a boy named Joel B., of the age which Dr. Boenning's patient must have been at that time, and presenting, as my notes show, a somewhat similar skin manifestation. The case was recorded by me as "undoubtedly eczema."

I do not say that my patient and Dr. Boenning's were the same individual, nor do I assert that his case was not one of prurigo: I simply say that the notes of the case as published point to eczema rather than to any other affection.

I have not the pleasure of knowing Dr. Boenning personally, and I trust he will not take amiss what has been to me the very disagreeable duty of criticising his interesting clinical report. It is to the interest of dermatology and of scientific medicine generally that no new-comer in the shape of a new disease, or a new case of a rare disease, should be admitted to fellowship without showing its credentials and making good its footing.

ARTHUR VAN HARLINGEN, M.D.

## OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY FROM APRIL 30 TO MAY 13, 1882.

**KING, WILLIAM S., COLONEL AND SURGEON.**—The extension of his leave of absence on account of sickness, granted him in S. O. 251, November 7, 1881, from A. G. O., still further extended six months on account of sickness. S. O. 104, A. G. O., May 5, 1882.

**WILLIAMS, JOHN W., MAJOR AND SURGEON.**—Granted leave of absence for six months. S. O. 101, A. G. O., May 2, 1882.

**CLEARY, P. J. A., CAPTAIN AND ASSISTANT-SURGEON.**—The leave of absence on surgeon's certificate of disability, granted him in S. O. 224, October 4, 1881, from A. G. O., is extended six months on account of sickness. S. O. 107, A. G. O., May 9, 1882.

**COWDREY, S. G., CAPTAIN AND ASSISTANT-SURGEON.**—Now awaiting orders, to report to Commanding General, Department of the East, for assignment to duty at Fort Monroe, Va. S. O. 103, A. G. O., May 4, 1882.

**HOFF, J. V. R., CAPTAIN AND ASSISTANT-SURGEON.**—To be relieved from duty in Department of the East, and report in person to Commanding General, Department of California, for assignment to duty. S. O. 103, c. 5, A. G. O.

**HALL, W. R., CAPTAIN AND ASSISTANT-SURGEON.**—Assigned to duty at Fort Bliss, Texas. S. O. 95, Department of the Missouri, May 8, 1882.

**PORTER, JOSEPH Y., CAPTAIN AND ASSISTANT-SURGEON.**—The extension of his leave of absence, granted him in S. O. 17, c. 5, Military Division of the Atlantic, is further extended twenty days. S. O. 99, A. G. O., April 29, 1882.

**CARTER, E. C., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.**—To be relieved from duty in Department of California, and report in person to Commanding General, Department of Arizona, for assignment to duty. S. O. 103, c. 5, A. G. O.

**RAYMOND, H. J., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.**—To be relieved from duty in Department of California, and report in person to Commanding General, Department of Arizona, for assignment to duty. S. O. 103, c. 5, A. G. O.